



**Bechtel Marine Propulsion Corporation**  
**Knolls Atomic Power Laboratory**  
Kesselring Site Operation  
P. O. Box 1072  
Schenectady, NY 12301-1072

## **SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN**

### **KNOLLS ATOMIC POWER LABORATORY – KESSELRING SITE**

**Revision 21, May 2014**

The Bechtel Marine Propulsion Corporation (BMPC) Knolls Atomic Power Laboratory (KAPL) is committed to the prevention of discharges of oil to navigable waters and the environment, and maintains the highest standards for spill prevention control and countermeasures through regular review, updating and implementation of this Spill Prevention, Control, and Countermeasure (SPCC) Plan for the Kesselring Site.

In accordance with 40 CFR 112.5(b), a review and evaluation of this SPCC Plan is conducted at least once every five years. Notwithstanding this five-year review, BMPC-Kesselring will amend the SPCC Plan when there is a change in the facility design, construction, operation or maintenance that materially affects the facility's potential for a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines. The amendment will be prepared within six months of the change and will be implemented as soon as possible, but no later than six months following preparation of the amendment.

Prepared By: Kenneth G. Gelting  
K. G. Gelting, Principal Compliance Engineer  
KSO, Environment, Safety and Health

Approved By: (b) (5)  
[Redacted Signature]  
KSO, Environment, Safety and Health

This Plan has the full approval of the BMPC-Kesselring Site Operation Manager who is at a level of authority to commit the necessary resources to fully implement the Plan.

Approved By: (b) (5)  
[Redacted Signature]

## SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN

### *KNOLLS ATOMIC POWER LABORATORY - KESSELRING SITE*

*(KAPL-KS)*

Name of Facility: Knolls Atomic Power Laboratory (KAPL) - Kesselring Site

Location: 350 Atomic Project Road  
Ballston Spa, NY 12020

Operator: Bechtel Marine Propulsion Corporation (BMPC) – Kesselring Site  
P.O. Box 1072  
Schenectady, NY 12301-1072

Contact: (b) (5), Project Officer  
Environment, Safety, and Health  
Naval Reactors Laboratory Field Office  
(b) (5)

Date of Initial Operation: 1954

Original Date of Plan: July, 1974

Date of Last Plan Amendment/P.E. Certification: April, 2013

Designated person accountable for spill prevention: (b) (5)  
KSO Environment, Safety and Health

### **CERTIFICATION**

By means of this certification, I, a Licensed Professional Engineer in the State of New York, attest:

- (i) That I am familiar with the requirements of 40 CFR Part 112;
- (ii) That I have visited and examined the facility;
- (iii) That the Plan has been prepared in accordance with good engineering practice, including consideration of applicable industry standards, and with the requirements of 40 CFR Part 112;
- (iv) That procedures for required inspections and testing have been established; and
- (v) That the Plan is adequate for the facility.

**SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN**

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Kenneth G. Gelting

Name of Registered Professional Engineer  
Principal Compliance Engineer  
Environment, Safety and Health

Kenneth G. Gelting

Signature of Registered Professional



Date 5/28/2014

Registration No: 075649 State: NY

## **SPILL PREVENTION, CONTROL, AND COUNTERMEASURE PLAN**

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## 1. INTRODUCTION

The U.S. Environmental Protection Agency (EPA) has promulgated regulations on oil pollution prevention in an effort to prevent discharges of oil to the nation's waters. The regulations were originally published in the Federal Register on December 11, 1972, and are codified at 40 CFR Part 112.

40 CFR Part 112 applies, in part, to non-transportation related facilities that due to their location, could reasonably be expected to discharge oil in quantities that may be harmful, as described in 40 CFR Part 110, into or upon the navigable waters of the United States or adjoining shorelines. Under these criteria, Part 112 specifically applies to any facility which includes, in part, aggregate aboveground oil storage in a quantity greater than 1,320 gallons. The Kesselring Site meets these criteria and is therefore subject to Part 112.

Pursuant to the requirements of Part 112, this document provides the Spill Prevention, Control, and Countermeasure (SPCC) Plan for the KAPL Kesselring Site (also referred to herein as "the facility", "the Site," or "the site"). The purpose of the SPCC Plan is to document the equipment, workforce, procedures, and steps to prevent, control, and provide adequate countermeasures to an oil discharge.

The SPCC Plan has been prepared in accordance with the detailed requirements of §112.7 and associated EPA guidance. Section 7.1 provides a cross-reference for the individual requirements of Part 112 with the location within the Plan where those requirements are addressed. Attachment 8.7 provides a list of revisions incorporated into this current Plan revision (Revision 21) from the most recent Plan version (Revision 20). Except as specifically detailed herein, the facility's existing infrastructure conforms to the requirements of Part 112.

The facility is not required to additionally develop and submit to EPA a Facility Response Plan because it does not meet any of the substantial harm criteria of §112.20(f)(1)(i) and (ii). A completed Certification of the Applicability of the Substantial Harm Criteria form is provided in Attachment 8.1.

A copy of this SPCC Plan is maintained at the facility and will be made available for on-site review by the Regional Administrator or their designee during normal working hours.

As provided in the preliminary pages to this Plan, the Plan has been certified by a Licensed Professional Engineer and has been approved by facility management at a level of authority to commit the necessary resources to fully implement the Plan.

The facility has not, within the preceding twelve months, discharged more than 1,000 gallons of oil in a single discharge as described in §112.1(b), or discharged more than 42 gallons of oil in each of two discharges as described in §112.1(b).

In accordance with §112.5(b), a review and evaluation of this SPCC Plan is conducted at least once every five years. As a result of this review and evaluation, BMPC-KAPL will amend the SPCC Plan within six months of the review to include more effective

prevention and control technology if the technology has been field-proven at the time of the review and will significantly reduce the likelihood of a discharge as described in §112.1(b) from the facility. This amendment will be implemented as soon as possible, but no later than six months following preparation of the amendment. Notwithstanding this five-year review, BMPC-KAPL will amend the SPCC Plan when there is a change in the facility design, construction, operation or maintenance that materially affects the facility's potential for a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines. The amendment will be prepared within six months of the change and will be implemented as soon as possible, but no later than six months following preparation of the amendment.

## 2. REFERENCES

- A. Title 40 Code of Federal Regulations Part 112, Oil Pollution Prevention
- B. Title 6 Part 613, New York State Code of Rules and Regulations, Handling and Storage of Petroleum
- C. KAPL-A-EP-1, Kesselring Site Environmental Protection Manual
- D. KAPL-A-W-1, Kesselring Site Emergency Plan
- E. KAPL-NPPSM-1, Kesselring Site Operation Non-Power Plant Systems Manual
- F. Kesselring Site Best Management Practices Plan
- G. KAPL-A-WM-1, KAPL Waste Management Manual
- H. Kesselring Site Contingency Plan (Attachment G of the 6 NYCRR Part 373 Hazardous Waste Management Facility Permit)
- I. SPCC Guidance for Regional Inspectors. U.S. Environmental Protection Agency, Office of Emergency Management, Regulation and Policy Development Division
- J. Standard for Inspection of In-Service Shop Fabricated Aboveground Tanks for Storage of Combustible and Flammable Liquids SP001-03. Steel Tank Institute, 2003.

## 3. APPLICABLE STANDARDS CONSIDERED IN REVIEW

The SPCC Plan preparation used the following documents as guidance in consideration of applicable industry standards to provide assurance that systems were installed and operated in a manner protective of human health and the environment. Tanks were designed and located to the revision date of the standard that was in effect during the procurement cycle.

- 1. New York State Uniform Fire Prevention and Building Code, July 2002, 9 NYCRR
- 2. New York State Department of Environmental Conservation, Handling and Storage of Petroleum, 1992, 6 NYCRR Parts 612 – 614
- 3. UL No. 142, Underwriters Laboratories, Standard for Steel Aboveground Tanks for Flammable and Combustible Liquids, No. 142, July 11, 2002, Underwriters Laboratories, 333 Pfingsten Road, Northbrook, IL 60062.

4. STI SP001, Steel Tank Institute, Standard for the Inspection of Aboveground Storage Tanks, 5<sup>th</sup> Edition, September 2011, Steel Tank Institute, 570 Oakwood Road, Lake Zurich, IL 60047.
5. API Standard No. 653, American Petroleum Institute, Tank Inspection, Repair, Alteration, and Reconstruction, 1998, American Petroleum Institute, 1220 L Street NW, Washington, DC 20005.
6. API Standard No. 570, American Petroleum Institute, Inspection, Repair, Alteration, and Rerating of In-Service Piping Systems, Second Edition October 1998, American Petroleum Institute, 1220 L Street NW, Washington, DC 20005.
7. National Fire Protection Association, Flammable and Combustible Liquids Code, No. 30, 2003, NFPA, Batterymarch Park, Quincy, MA 02269.
8. National Fire Protection Association, Automotive and Marine Service Station Code, NFPA No. 30A, 2003, NFPA, Batterymarch Park, Quincy, MA 02269.

#### 4. FACILITY OPERATIONS

The Kesselring Site is located near West Milton, New York, approximately 17 miles north of Schenectady, 9 miles southwest of Saratoga Springs and 13 miles northeast of Amsterdam. A Site Location Map is provided in Attachment 8.3.

The Site is owned by the U.S. Department of Energy (DOE) and operated by BMPC under the direction of DOE and Naval Reactors. The facility has been in operation since the middle of the 1950's with the principal function of performing research and development in the design and operation of Naval Nuclear Propulsion Program plants and for the training of personnel in the operation of these plants.

The Site comprises a total area of approximately 3,900 acres of which approximately 50 acres have been developed. The surrounding area is a rural, sparsely populated region of wooded lands through which flow Glowegee Creek and several small streams, which empty into the Kayaderosseras Creek. The Facility Diagram is provided in Attachment 8.4 and depicts the primary facility infrastructure for the developed area. The developed area includes two operating pressurized-water naval nuclear propulsion plants (Prototypes) and support facilities, including administrative offices, training facilities, equipment service buildings, a boilerhouse, cooling towers, water supply and distribution facilities, a sanitary wastewater treatment facility and a lagoon wastewater treatment system.

Glowegee Creek, a New York State Class C trout stream, flows through the Site. Glowegee Creek joins with the Kayaderosseras Creek approximately 4.3 miles downstream from the Site. Kayaderosseras Creek, in turn, empties into Saratoga Lake. Treated wastewater and stormwater is discharged from the facility to Glowegee Creek in accordance with an individual State Pollutant Discharge Elimination System (SPDES) Permit issued by the New York State Department of Environmental Conservation

(NYSDEC). These discharges occur through various permitted outfalls to Glowegee Creek.

Treated wastewater is discharged to Glowegee Creek from two sources, the lagoon wastewater treatment system and the sanitary wastewater treatment facility. The lagoon wastewater treatment system receives an average of 0.62 million gallons per day of wastewater from site operations, as well as site stormwater flows. The sources of wastewater are mainly non-contact cooling water, discharges from cooling towers, prototype plant retention basins, extracted groundwater, and a reverse osmosis (RO) pure water system. The Site sanitary wastewater treatment facility effluent is discharged to Glowegee Creek through SPDES Outfall 003, which is independent of the lagoon wastewater treatment system discharge to Glowegee Creek.

Oils are delivered to and transported from the Site via trucks utilizing the local roadway system. The facility does not include any tank truck loading/unloading racks.

#### 5. STORMWATER DRAINAGE SYSTEM

An engineered stormwater drainage system is provided for the developed site, with the exception of the site service water pump houses located to the east of the developed site area. As summarized below, the stormwater drainage system is engineered to provide multiple layers of protection to prevent the release of waterborne contaminants. The primary features of the stormwater drainage system, including the locations of the Site's SPDES-permitted outfalls to Glowegee Creek, are depicted on the Facility Diagram (Attachment 8.4). A detailed description of the site drainage system and its operation is provided in the KSO Non-Power Plant Systems Manual (*Reference E*).

Stormwater catch basins and drop inlets are provided across the developed site and convey stormwater drainage to a series of drainage ditches. The site drainage is controlled at critical locations by a series of sluice gates; the individual storm sewer sheds created by these sluice gates are depicted on the Facility Diagram.

Approximately two-thirds of the developed site, to the north and west, discharge to the S8G Ditch through sluice gates 3, 4, and 5. These three sluice gates are hand-operated and include an immediate upstream underflow oil baffle and debris screen. The underflow oil baffle serves to contain any incidental floating oil upstream of the sluice gate discharge, retaining the oil to allow for its manual collection and removal from the drainage system. The S8G Ditch drains most of the industrial portion of the Site, including the majority of the oil storage and use locations.

The S8G ditch discharges to the lagoon wastewater treatment system through sluice gate 2. Sluice gate 2 is motor-operated with manual override capability and is equipped with an upstream underflow oil baffle and debris screen.

Drainage from the southeast portion of the developed site drains to sluice gate 6, which is permanently maintained in the closed position. A submersible pump is permanently installed in sluice gate 6: stormwater drainage collecting behind the closed sluice gate 6 is automatically pumped to the lagoon wastewater treatment system through sluice gate 7.

From the lagoon wastewater treatment system, the commingled wastewater and stormwater is discharged by pumps through underground piping to SPDES Outfalls 001 and 002 for discharge to Glowegee Creek. The lagoon wastewater treatment system has three permanently installed pumps to support system operation. Only one pump is placed in operation at a time. The remaining two pumps are normally maintained in an operational standby status. This system can also be remotely monitored and secured in the event of an out of specification condition.

Sluice gate 8 is located at the outlet to the lagoon wastewater treatment system and is normally shut. This sluice gate is provided for limited, non-routine controlled discharge of the lagoon and includes an underflow oil baffle and debris screen.

Stormwater runoff from the southern most area of the developed site and the main parking lots discharges in a southerly direction to the Parking Lot Ditch. The Parking Lot Ditch discharges to Glowegee Creek at SPDES Outfall 004 through sluice gate 10. Sluice gate 10 is motor-operated with manual override capability and includes an upstream underflow oil baffle and debris screen.

Stormwater runoff that is not discharged through the lagoon wastewater treatment system or sluice gate 10 is discharged via unattended gravity flow through SPDES Outfalls 01A, 02A, 005, and 006. SPDES Outfalls 01A and 02A discharge stormwater that collects in the Site's historical drainage ditches; these ditches were removed from use when the lagoon wastewater treatment system was installed in 1986. SPDES Outfall 01A is downstream of sluice gate 1 and SPDES Outfall 02A is downstream of sluice gate 9. SPDES Outfall 005 is located along Hogback Road. SPDES Outfall 006 drains stormwater runoff from the Site landfill which was closed and capped in 1994.

Site drainage can be contained by opening and/or closing a combination of sluice gates to isolate discharges from the S8G Ditch, the lagoon wastewater treatment system and the Parking Lot Ditch. Sluice gates 2, 3, 4, 5, 8, and 10 are equipped with an upstream underflow baffle to help contain oil in the event of a spill. Also, loofah booms are typically placed inside these baffles to help contain any oil. Finally, there are normally booms placed at several locations in the S8G Ditch and the MARF Parking Lot Ditch to contain any oil which is spilled or accumulates. Sluice gates 3, 4, and 5 are normally open, but can be manually shut to isolate discharges into the S8G Ditch. Sluice gates 1 and 8 are normally shut and gates 2 and 10 are normally open. Sluice gates 2 and 10 are motor-operated valves that can be shut locally or remotely in the event of an out of specification condition. Sluice gate 6 is normally closed and sluice gate 9 is normally open to allow stormwater drainage through SPDES Outfall 02A. Sluice gate 9 can be closed manually to isolate discharge from this area in the event of an out of specification condition.

Sluice gate 10 can be closed locally or remotely in the event of a casualty to prevent contaminants from entering the Glowegee Creek through SPDES Outfall 004. The function of this gate and the loofah booms normally located upstream of this gate is to reduce the risk of contaminants (i.e. oils, chemicals) reaching this drainage way in the event of a spill, fire, or other emergency in the southern area of the site or parking lot.

The S8G Ditch, the lagoon wastewater treatment system, the Parking Lot Ditch and sluice gates 2, 3, 4, 5, 6, 7, and 10 are visually inspected at least once during each 8-hour work shift on a daily basis by Incident Prevention personnel. These visual inspections include, in part, observations for the presence of oil. In the event oil is observed during these inspections, response actions are immediately initiated.

Stormwater runoff is discharged from the Site, as described above, in accordance with the NYSDEC's current General Permit for Municipal Separate Storm Sewer Systems. In addition, stormwater runoff from onsite construction sites disturbing greater than one acre is further discharged in accordance with NYSDEC's current General Permit for Stormwater Discharges from Construction Activities.

## 1. INTRODUCTION

The Kesselring Site facilities require use of a variety of petroleum products in containers having a capacity of 55 gallons or greater to support their operation. These include Number 2 fuel oil, diesel fuel, gasoline, lubricating oil, transformer oil, and hydraulic oil. Each of these products is stored and used in several different locations and systems. Used oil generated as a result of Site operations is also stored on-site in containers having a capacity of 55 gallons or greater.

All oil containers are aboveground with the exception of the MARF Diesel Fuel Oil Storage Tank. The MARF Diesel Fuel Oil Storage Tank is a below ground bulk storage tank that is in compliance with all of the technical requirements of 40 CFR Part 280, and is therefore exempt from SPCC requirements, per §112.1(d)(4)). Its location is marked on the Facility Diagram (Attachment 8.4) with a designation of Exempt (EX) 28 and with the exception of its fuel loading activity, it is not further addressed herein.

There are no partially buried metallic oil bulk storage containers at the Kesselring Site. There are no oil bulk storage containers that contain internal steam heating coils at the Kesselring Site. All petroleum products and used oil are stored in containers that are constructed of material that is compatible with the material being stored and the conditions of storage such as temperature and pressure. All secondary containment structures are constructed of material that is impervious to the stored oil, and will contain the oil until a spill is identified and spill cleanup actions are initiated.

As described and evaluated below, and except as detailed herein, appropriate containment and/or diversionary structures and/or equipment are provided (or are able to be expeditiously provided) for the facility's SPCC-jurisdictional oil storage, handling and transfer areas to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

As described in Section 1.5 above, drainage from the site areas encompassed by storm sewer sheds 3, 4, 5, and 10 is controlled by sluice gates equipped with underflow oil baffles. The underflow oil baffles serve to contain any incidental floating oil upstream of the sluice gate discharge, retaining the oil to allow for its manual collection and removal from the drainage system. Accordingly, it is noted that for these site areas, in general, the sluice gates and underflow oil baffles provide the minimum general secondary containment system required by §112.7(c).

The Facility Diagram (Attachment 8.4) shows the location of all SPCC-jurisdictional oil containers, designated oil transfer areas, remote fill ports, and designated tank truck loading and unloading areas.

The following is an evaluation of all systems that store oil in containers having a capacity of 55 gallons or greater at the Kesselring Site. Each system has been evaluated independently and the systems are grouped by responsible organization. Unless otherwise noted, the worst case spill would involve the total design volume of the respective oil container.

## 2. FACILITIES, PROJECTS &amp; OPERATIONS

## A. 30,000 Gallon Fuel Oil Storage Tank (25B) (NYS Registered Tank #005)

1. Location: West of Building 8. The tank location is shown on the Facility Diagram with a designation of Stationary Aboveground Storage Tank (SAST) 5.
2. Contents: Number 2 fuel oil
3. Capacity: 30,000 gallons
4. Installation Date: 11/83
5. Construction:
  - Aboveground Steel/Carbon Steel
  - Construction design documents, and supporting information, indicate that the tank is installed on a reinforced concrete ringwall, keyed into and supported on a monolithic slab with grade beams to form a foundation. This structure is filled with granular drainage media within the interior of the ringwall and over the monolithic slab.
  - Field erected
  - Equipped with a direct-read float-operated visual hydraulic tank level gauge mounted on the tank side

In the event the tank undergoes a repair, alteration, reconstruction, or a change in service that might affect the risk of discharge or failure due to brittle fracture or other catastrophe, or has discharged oil or failed due to brittle fracture failure or other catastrophe, the tank will be evaluated for risk of discharge or failure due to brittle fracture or other catastrophe. Appropriate follow-up action to this evaluation will be promptly taken.

6. Use: Supply fuel oil to Tank #006. The tank pumping/dispensing method is gravity.
7. Secondary Containment System:

The tank is situated within the boilerhouse secondary containment structure, which is constructed of reinforced concrete that is coated with a polysulfide base rubber coating system. The secondary containment structure is located outdoors and accumulates precipitation. Volume calculations and associated analysis for the boilerhouse secondary containment structure are provided in Attachment 8.5. These calculations and analysis confirm that, for the side walls of tank #005, the boilerhouse secondary containment structure provides sufficient secondary containment to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

The stormwater drainage system for the boilerhouse secondary containment system is manually operated and is controlled by a key operated switch. Without the key installed, the drainage system will not operate. The boilerhouse operators control access to this key. The discharge from this drainage system enters the Site discharge system at gate 3. The surface of the stormwater is visually inspected for an oil sheen prior to discharging the water into the site discharge system. Should accumulated stormwater have an oil sheen, the contaminants will be removed using appropriate absorbent materials.

Discharges will only commence upon approval from a trained, authorized staff member that water is free of visible oil sheen and weather conditions are suitable (or required) for discharge. The date, time, and names of personnel supervising each discharge event from this secondary containment structure are recorded in the boilerhouse operator's log.

Construction design documents, and supporting information, indicate that the tank is installed on a reinforced concrete ringwall, keyed into and supported on a monolithic slab with grade beams to form the tank foundation. This structure is filled with granular drainage media within the interior of the ringwall and over the monolithic slab. Visual confirmation of the integrity of the monolithic slab foundation is not practical. Documentation is not presently available to confirm that, for the tank bottom, appropriate secondary containment and/or diversionary structures or equipment is presently available to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

8. Associated Transfer Piping:  
All transfer piping is steel/carbon steel and stainless steel. All outdoor piping is run inside the secondary containment structure provided for the storage tank. The pipes are routed aboveground and supported by pipe stanchions. Piping inside the boiler house runs aboveground with a portion of the piping running in a concrete trench. Pipe stanchions also support this piping. Details on this piping are contained in Reference E.
9. Storage Tank Filling Operations:  
The tank is remotely filled from commercial tank trucks, which are equipped with transfer pumps and flexible supply hoses. For the tank truck unloading activity, the tank truck (i.e., the cargo tank) is parked wholly within the designated tank truck unloading area provided as part of the overall boilerhouse secondary containment structure, designated and located on the Facility Diagram as Tank Truck Unloading Area A.

Tank Truck Unloading Area A is a sloping pad constructed of reinforced concrete which drains to the boilerhouse secondary containment structure. Accordingly, Tank Truck Unloading Area A will provide secondary containment for single largest compartment of the unloading tank truck.

An engineered remote fill port structure, located within the confines of the boilerhouse secondary containment structure, is used for tank loading by the commercial tank truck. The location of the remote fill port is shown on the Facility Diagram with a designation of RFP 1. The area around the remote fill port drains to the base containment area of the boilerhouse secondary containment structure.

The tank truck hoses are equipped with mechanical latches to ensure the hose does not disengage during a filling evolution. At least one set of wheels are chocked front and back to prevent truck movement during filling operations. Tank overfill is prevented by verifying that at least 15,000 gallons of capacity is available for a 10,000 gallon fuel oil delivery prior to ordering fuel. In addition, the filling evolutions are under direct control of boiler house personnel who continuously monitor all aspects of the offload, including direct continuous attendance at and monitoring of the tank level gauge. A direct audible or code signal is maintained between the boilerhouse operator overseeing the filling evolution and the truck pump operator. If a leak develops in any part of the process, fuel transfer is immediately secured.

10. Safety Systems:

This tank has a float operated hydraulic level indicator. In the event of a pipe leak, the leakage can be secured by closing associated piping isolation valves. Curbing and metal rails are installed as part of Tank Truck Unloading Area A to keep the tank truck from damaging the tank system piping. Spill control equipment is maintained on-site to support the containment and cleanup of a spill.

11. Spill Potential and Direction of Flow:

i. Spill Potential:

A spill could occur during oil transfer operations, or due to leaks in piping, equipment or the tank.

ii. Direction of Flow:

A spill from the tank system piping could vary from a rate of drops/minute to a rate of gallons/minute depending on the severity and location of the pipe breakage. All the leakage would be either contained in the boilerhouse secondary containment structure or inside the boilerhouse, depending on the location of the leak. A leak on the piping going from the tank to the Site boilers would likely causes the fuel oil pressure to the boilers to drop below 50 psig, which would result in the boilers shutting down due to low fuel oil pressure. This condition will activate an alarm, alerting the boilerhouse operator that an abnormality exists in the system. The operator is trained to investigate this alarm and would identify and isolate the leak.

A spill during a delivery could vary from a rate of drops/minute to a rate of gallons/minute depending on the severity and location of the leak. As previously identified, operators are continuously in attendance during each filling evolution. Thus a spill during this evolution would be immediately identified and corrective actions quickly initiated. In the case of any release, the spill would be contained within the confines of the boilerhouse secondary containment structure.

B. 60,000 Gallon Number 2 Fuel Oil Tank (25A) (NYS Registered Tank #006)

1. Location: West of Building 8. The tank location is shown on the Facility Diagram with a designation of SAST 6.
2. Contents: Number 2 fuel oil
3. Capacity: 60,000 gallons
4. Installation Date: 11/83
5. Construction:
  - Aboveground Steel/Carbon Steel
  - Construction design documents, and supporting information, indicate that the tank is installed on a reinforced concrete ringwall, keyed into and supported on a monolithic slab with grade beams to form a foundation. This structure is filled with granular drainage media within the interior of the ringwall and over the monolithic slab.
  - Painted exterior surface
  - Field erected
  - Equipped with a direct-read float-operated visual hydraulic tank level gauge mounted on the tank side

In the event the tank undergoes a repair, alteration, reconstruction, or a change in service that might affect the risk of discharge or failure due to brittle fracture or other catastrophe, or has discharge oil or failed due to brittle fracture failure or other catastrophe, the tank will be evaluated for risk of discharge or failure due to brittle fracture or other catastrophe. Appropriate follow-up action to this evaluation will be promptly taken.

6. Use: Supply fuel oil to the site boilers, which supply heat to the site. The tank pumping/dispensing method is gravity.
7. Containment System:  
The tank is situated within the boilerhouse secondary containment structure, adjacent to Tank #005 (above). Volume calculations and associated analysis for the boilerhouse secondary containment structure

are provided in Attachment 8.5. These calculations and analysis confirm that, for the sidewalls of Tank #006, the boilerhouse secondary containment structure provides sufficient secondary containment to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

Stormwater drainage management and discharge for the boilerhouse secondary containment structure is detailed in Section 2.A.7, above.

Construction design documents, and supporting information, indicate that the tank is installed on a reinforced concrete ringwall, keyed into and supported on a monolithic slab with grade beams to form the tank foundation. This structure is filled with granular drainage media within the interior of the ringwall and over the monolithic slab. Visual confirmation of the integrity of the monolithic slab foundation is not practical. Documentation is not presently available to confirm that, for the tank bottom, appropriate secondary containment and/or diversionary structures or equipment is presently available to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

8. Associated Transfer Piping:  
The transfer piping system for the tank is identical to the transfer piping system for Tank #005, relative to location, containment, operation, and control. This system is detailed in Section 2.A.8, above.
9. Storage Tank Filling Operations:  
This tank uses the same filling operations as for Tank #005, relative to location, containment, operation, and control. See Section 2.A.9, above.
10. Safety Systems:  
This tank has a float operated hydraulic level indicator. In the event of a pipe leak, the leakage can be secured by closing associated piping isolation valves. Curbing and metal rails are installed as part of Tank Truck Unloading Area A to keep the tank truck from damaging the tank system piping. Spill control equipment is maintained on-site to support the containment and cleanup of a spill.
11. Spill Potential and Direction of Flow:
  - i. Spill Potential:  
A spill could occur during transfer operations, and due to leaks in piping, equipment or the tank.
  - ii. Direction of Flow:  
See Section 2.A.11, above, for a full description of the potential spill direction and countermeasures.

## C. 4,000 Gallon Diesel Fuel Oil Storage Tank (NYS Registered Tank #039)

1. Location: South West of Building 8. The tank location is shown on the Facility Diagram with a designation of SAST 39.
2. Contents: Diesel Fuel
3. Capacity: 4,000 gallons
4. Installation Date: 8/01
5. Construction:
  - Aboveground Steel/Carbon Steel
  - Epoxy lined internal surface
  - Painted exterior surface
  - Factory built
6. Use: Supply diesel fuel to site vehicles and equipment. The tank pumping/dispensing method is suction.
7. Containment Systems:

The tank is a double-walled aboveground tank equipped with a continuous interstitial electronic monitoring leak detection system. The interstitial leak detection system includes an audio and visual alarm mounted on the tank. The double-walled tank design and interstitial monitoring system collectively provide sufficient secondary containment for the tank to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

The tank is situated on a curbed pad constructed of reinforced concrete; drainage from the curbed pad drains to the boilerhouse secondary containment structure. This infrastructure provides containment for the tank's transfer piping, within the confines of the secondary containment structure.

The concrete containment pad and curb is coated with a polymer compound (Marseal 8,000).
8. Associated Transfer Piping:

All piping for this tank is constructed of steel and runs on the concrete pad. A flexible hose is used to refuel site vehicles from the diesel pump. The fill port for the tank is located at ground level to reduce spill potential and increase safety. The system piping is contained within the concrete containment. The fill hose is also normally stored within the concrete containment. Details on this piping system are contained in Reference E.

## 9. Storage Tank Filling Operations:

The tank is filled from commercial tank trucks equipped with pumps. The tank truck is parked at Tank Truck Unloading Area A. Trucks are parked in the delivery station and at least one set of tires are chocked front and back to prevent truck movement during filling operations.

Tank Truck Unloading Area A is a sloping pad constructed of reinforced concrete which drains to the boilerhouse secondary containment structure. Accordingly, Tank Truck Unloading Area A will provide secondary containment for single largest compartment of the unloading tank truck.

The flexible fill line from the delivery truck is placed in the tank fill port or attached via cam-lock type fitting. Tank filling operations are under the direct control of the boiler house personnel who continuously monitor all aspects of the offload, including direct continuous attendance at and monitoring of the tank level gauge. Tank overfill is prevented through the use of a direct audible code or signal between the boiler house operator overseeing the filling evolution and the truck pump operator.

The tank truck unloading area will contain any overfills or spills during filling. There also is a local high level alarm and leak detection system. Tank filling operations are continuously monitored and pumping would be secured to prevent a major spill from occurring should a leak develop.

## 10. Safety Systems:

The tank has a mechanical float level detector, with analog display for the level in the tank and to signal the high level alarm. The interstitial space between the two tanks is monitored continuously with an electronic level detector for evidence of leakage. The delivery station uses curbing and steel bollards to prevent vehicles from hitting system piping. Also the delivery station drains to the boilerhouse secondary containment structure. Spill control equipment is maintained on-site to support the containment and cleanup of a spill.

## 11. Spill Potential and Direction of Flow

## i. Spill Potential:

A spill could occur during filling and transfer operations or due to leaks in the tank or associated piping.

## ii. Direction of Flow:

A spill from the tank could vary from a rate of drops/minute to an instantaneous failure of the tank. The spill would be contained in the outer tank and would initiate the alarm in the interstitial space thus providing indication to the operators that a leak has occurred.

A spill from the piping system could vary from a rate of drops/minute to gallons/minute depending on the location and size of the

leak. This fuel would be contained in the tank or the concrete containment surrounding the tank.

A spill due to overflowing the tank during a filling evolution would be at a rate of gallons/minute. Since these evolutions are continuously monitored, the spill would be quickly identified and the filling evolution secured. All of the fuel from this spill would be contained in the tank secondary containment or the concrete containment surrounding the tank.

A spill due to the rupture of the fill hose while the storage tank is being filled from a commercial vehicle could be at a rate of gallons/minute depending on the size of the leak. Depending on the location of the leak, the fuel would spill into and be contained in the delivery station. Since the fill evolution is continuously monitored, the evolution would be secured when the spill occurred thus minimizing the amount of fuel spilled.

The last potential for a spill occurs when the filling hose is used to refuel site vehicles. The filling is by a pump system to fuel vehicles. A spill could occur due to a hose rupture or from overfilling the vehicle fuel oil tank. Since this evolution is continuously monitored, the filling evolution would be immediately secured if a spill occurred, thus minimizing the amount of fuel oil spilled. The fuel oil would either collect in the delivery station or in the tank secondary containment.

- D. 4,000 Gallon Aboveground Gasoline Tank (NYS Registered Tank #030)
1. Location: West of Building 8. The tank location is shown on the Facility Diagram with a designation of SAST 30.
  2. Contents: Unleaded Gasoline
  3. Capacity: 4,000 gallons
  4. Installation Date: 7/92
  5. Construction:
    - Aboveground Steel/Carbon Steel
    - No internal protection
    - Painted exterior surface
    - Factory built
  6. Use: Supply gasoline for site vehicles and equipment. The tank pumping/dispensing method is suction.

## 7. Containment System:

The secondary containment consists of a painted metal secondary containment dike with welded rain flaps. Due to the presence of the welded rain flaps, the metal dike does not provide complete secondary containment for the tank.

The tank is situated on a curbed pad constructed of reinforced concrete; drainage from the curbed pad drains to the boilerhouse secondary containment structure. Volume calculations and associated analysis for the boilerhouse secondary containment structure are provided in Attachment 8.5. These calculations and analysis confirm, for Tank #030, that the boilerhouse secondary containment structure provides sufficient secondary containment to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

## 8. Associated Transfer Piping:

All piping except the fueling hose is constructed of steel and runs on the concrete pad or in a concrete trench, which drains to the delivery station. A flexible hose is used to refuel site vehicles from the gasoline pump.

## 9. Filling Operations:

The tank is filled from commercial tank trucks equipped with pumps. The tank truck is parked at Tank Truck Unloading Area A. Trucks are parked in the delivery station and at least one set of tires are chocked front and back to prevent truck movement during filling operations.

Tank Truck Unloading Area A is a sloping pad constructed of reinforced concrete which drains to the boilerhouse secondary containment structure. Accordingly, Tank Truck Unloading Area A will provide secondary containment for single largest compartment of the unloading tank truck.

The flexible fill line from the delivery truck is positively secured to the 4,000-gallon gasoline tank using a camlock fitting. The gasoline transfer is controlled by a tank truck shutoff valve. Tank filling evolutions are under the direct control of the boiler house personnel who continuously monitor all aspects of the offload, including direct continuous attendance at and monitoring of the tank level gauge. Tank overfill is prevented through the use of a direct audible or code signal between the boiler house operator overseeing the filling evolution and the truck pump operator. The gasoline in the fill line is drained into the 4,000-gallon tank prior to disconnecting from the tank to avoid any spillage.

Tank filling evolutions are continuously monitored and pumping would be secured to prevent a major spill from occurring should a leak develop.

## 10. Safety Systems:

The tank has a float level indicator. The tank and the metal secondary containment sit on a concrete pad, which directs any leakage to boilerhouse secondary containment structure. The tank and piping are protected from vehicle damage through the use of curbing. The nozzle is a typical commercial gasoline nozzle. The flow through the nozzle is limited to less than ten gallons/minute and the nozzle stops gasoline flow when it senses the vehicle being filled is nearing full capacity. Spill control equipment is maintained on site to support the containment and cleanup of a spill.

## 11. Spill Potential and Direction of Flow:

## i. Spill Potential:

A spill would most likely occur during filling and transfer operations or from piping or equipment failure.

## ii. Direction of Flow:

A spill from the tank could vary from a rate of drops/minute to an instantaneous spill of 4,000 gallons. In the event of a tank rupture, the gasoline would be contained in the metal secondary containment or on the concrete pad depending on the location of the leak. Gasoline spilled on the concrete pad will flow into the boilerhouse secondary containment structure.

A spill from the system piping could vary from a rate of drops/minute to gallons/minute based on the severity of the leak. In the event of a pipe leak the gasoline would be contained on the concrete pad or in the concrete trench. The gasoline on the pad would flow into the boilerhouse secondary containment structure. The gasoline in the trench would be contained in the delivery station.

A spill from the system piping could vary from a rate of drops/minute to gallons/minute based on the severity of the leak. In the event of a spill during the filling of the gasoline tank or during a vehicle refueling evolution, the gasoline would be contained either on the concrete pad, which the tank sits on, or within the delivery station. Some gasoline could spray from the hose to the grassy area adjacent to the tank where it would accumulate for subsequent cleanup. Since these evolutions are continuously monitored, the gasoline transfers would be secured immediately to minimize the amount of gasoline spilled. No gasoline would be released to the site discharge system.

## E. 135 Gallon Diesel Fuel Tank (NYS Registered Tank #040)

1. Location: West of Building 17. The tank location is shown on the Facility Diagram with a designation of SAST 40.

2. Contents: Diesel fuel
3. Capacity: 135 gallons
4. Installation Date: 11/04
5. Construction:
  - Aboveground Steel/Carbon Steel
  - Contact with an impervious surface
  - No internal protection
  - Painted exterior surface
  - Factory built
6. Use: Supply diesel fuel to the emergency generator. The tank pumping/dispensing method is suction.
7. Containment System:

The tank is a double-walled aboveground tank equipped with a continuous interstitial electronic monitoring leak detection system. The interstitial leak detection system includes an audio and visual alarm mounted inside the generator enclosure. The double-walled tank design and interstitial monitoring system collectively provide sufficient secondary containment for the tank to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.
8. Associated Transfer Piping:

The fuel tank (sub-base) is mounted directly beneath the generator and the engine takes fuel suction directly off the tank.
9. Filling Operations:

Tank filling occurs at Tank Truck Unloading Area E. Diesel fuel deliveries are normally from the Site's portable diesel fuel storage tank. If the tank is filled from a commercial tank truck, the tank truck (i.e., cargo tank) is parked wholly inside a portable secondary containment designed to hold at least the largest total actual verified quantity of oil contained within any compartment of the unloading cargo tank. The integrity of portable secondary containment is inspected before use/delivery. At least one set of tires are chocked front and back to prevent truck movement during filling operations. Overfill of the fuel tank is prevented through the use of a direct read indicator next to the fuel fill pipe visible to the truck pump operator monitored continuously during the fill operation. Tank filling operations are continuously monitored and pumping would be secured to prevent a major spill from occurring should a leak develop.
10. Safety Systems:

The tank has a level indicator and is located on a concrete pad, which is surrounded by a paved area. Spill control equipment is maintained on site

to support the containment and cleanup of a spill. There is a local interstitial region leak detection alarm.

11. Spill Potential and Direction of Flow:

i. Spill Potential:

A spill would most likely occur during filling operations or from equipment or tank failure.

ii. Direction of Flow:

A spill from the tank could vary from a rate of drops/minute to an instantaneous spill of 135 gallons. A spill from the generator engine fuel line could vary from a rate of drops/minute to a rate of quarts/minute. A spill from the tank would be contained in the interstitial region between the inner and outer tanks and would be indicated by the tank alarm at the generator.

The generator west of Building 17 is normally secured so the amount of diesel fuel spilling from a leak under these conditions would be minimal. If the generator was in operation when the leak developed, the leak could be at a rate varying from drops/minute to quarts/minute based on the severity of the leak.

Diesel fuel released from the tank and generator could collect outside in a low point. If enough diesel fuel were spilled, the fuel would flow into the Area 23 High Yard, where the fuel would accumulate in the crushed rock where it would be subsequently cleaned up.

A leak during a tank filling evolution could be at a rate of gallons/minute and if from the portable tank would be contained in the portable tank metal containment. If the leak is from the transfer hose, the diesel fuel will spill onto the paved roadway. Since this fill evolution is continuously monitored, the filling evolution would be secured immediately to minimize the amount of diesel fuel spilled. Some diesel fuel could flow into the Area 23 High Yard, where it will accumulate in the crushed rock until the spill is cleaned up.

F. 330 Gallon Portable Diesel Fuel Tank

1. Location: West of Building 8. The tank is shown on the Facility Diagram with a designation of Portable Aboveground Storage Tank (PAST) 1.
2. Contents: Diesel Fuel Oil
3. Capacity: 330 gallons
4. Installation Date: December 2005

5. Construction: Steel/Carbon Steel
6. Use: Supply diesel fuel to Site equipment. The tank pumping/dispensing method is suction.
7. Containment System:

The tank is a double-walled aboveground tank. The secondary containment has a two inch plugged visual cavity space inspection opening, allowing for periodic manual inspection for the presence of oil in the interstitial space. The double-walled tank design and interstitial monitoring capability collectively provide sufficient secondary containment for the tank to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.
8. Associated Transfer Piping:

A flexible hose is used to refuel site vehicles from the diesel pump (10 gpm max, 115 VAC pump, filter, 3/4" by 12' hose, automatic nozzle).
9. Filling Operations:

The tank is no longer filled with new fuel. Upon consumption of its current fuel inventory, the tank will be permanently rendered out of service.
10. Safety Systems:

The tank has a fill adapter with a cap, a whistle fill alarm and cap, an emergency vent, a level indicating gauge, a five gallon fill/overflow spill box lockable hinged lid, and a manual drain-back valve. Any indications of a leak or loss of inventory would lead to corrective action. The tank is also equipped with anti-surge baffles as the tank is designed to be moved by means of fork tines inserted in forklift pocket tubes. Secondary containment is provided by double wall construction.
11. Spill potential and Direction of Flow:
  - i. Spill Potential:

A spill would most likely occur during filling operations or from equipment or tank failure.
  - ii. Direction of Flow:

A spill from the tank could vary from a rate of drops/minute to an instantaneous failure of the tank. The spill would be contained within the metal secondary containment or the concrete containment surrounding the metal secondary containment. A spill from the piping system could vary from a rate of drops/minute to gallons/minute depending on the location and size of the leak.

A spill due to overflowing the tank during a filling evolution would be at a rate of gallons/minute. Since these evolutions are

continuously monitored, the spill would be quickly identified and the filling evolution secured. All of the fuel oil from this spill would be contained in the tank metal secondary containment or the concrete containment surrounding the tank.

A spill would most likely occur during fuel oil transfers or during the transport of the tank between site facilities. During both of these evolutions personnel are present who would identify and initiate corrective actions for the spill. Depending where on the facility the spill occurs, some oil could enter the site storm drain system.

G. Building 60 Oil Drum Storage

Building 60 is used to store 55-gallon drums of new oil, used oil and oily water. The location of this oil drum storage area is shown on the Facility Diagram with a designation of Drum Storage Area (DSA) 8. The design capacity of this oil drum storage is two 55-gallon drums.

All oil drums are stored on designed secondary containment structures sized to contain at least the capacity of the single largest drum stored on the structure. The oil drums are stored in an upright position with the bungs tightly closed except when oil is being added to or removed from the drums.

Any leakage from the oil drum would be contained within the underlying secondary containment structure and pumped to appropriate containers.

Spills from these drums would most likely occur during transport of the containers from Building 60 or when oil is being added to the container. During both of these evolutions personnel are present who would identify and initiate corrective actions for the spill. Depending where on the facility the spill occurs, some oil could enter the site storm drain system. As described in Section 1.5 above, drainage from the site areas encompassed by storm sewer sheds 3, 4, 5, and 10 is controlled by sluice gates equipped with underflow oil baffles. The underflow oil baffles serve to contain any incidental floating oil upstream of the sluice gate discharge, retaining the oil to allow for its manual collection and removal from the drainage system.

H. Building 102 Elevator

The Building 102 elevator is an oil-filled operating equipment system that uses hydraulic oil for operation of the elevator. The elevator hydraulic system is a closed-looped system having a design capacity of 129 gallons. The location of the elevator is shown on the Facility Diagram with a designation of Elevator (ELE) 102.

The elevator system and associated elevator shaft is situated within interior structural enclosures that do not include any floor drains. By inspection, oil

leakage from the hydraulic oil reservoir would be completely contained within the immediate elevator room. The elevator is located within storm sewer shed 10; drainage from this area is controlled on-site by a sluice gate equipped with an underflow oil baffle. These collective infrastructure features provide sufficient secondary containment for the elevator to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

1. Area 30 (30 Highyard) Transformer Set

1. Location: This high yard is located south of Building 3C in Area 30. The transformer set location is shown on the Facility Diagram with a designation of Transformer (T) 11, 12, and 13.

2. Contents: 10-C oil

3. Capacity: This high yard consists of several individual oil-filled electrical equipment pieces. A list of these pieces and their oil capacities is as follows:

Main Transformer A – 3220 gallons

Load Tap Changer A – 150 gallons

Main Transformer B – 3220 gallons

Load Tap Changer B – 150 gallons

Main Transformer C – 3220 gallons

Load Tap Changer C – 150 gallons

Total Capacity – 10,110 gallons

4. Containment System and Measures:

Each set of transformers and load tap changers is surrounded by a macadam dike filled with crushed rock. In the event of oil leakage, initial quantities of the oil would be contained within the macadam dike and begin to infiltrate downward into the crushed rock void spaces and the underlying ground. A larger quantity of leaked oil may lead to a release of oil outside of the macadam dike. A larger quantity of oil loss from any of the individual equipment pieces would likely result in failure of the equipment piece, which would then likely result in a loss of electrical power to portions of the facility infrastructure. This loss of power would cause an almost immediate personnel response to identify the cause of the power loss, resulting in prompt identification of the emergent oil leak followed by immediate response actions by trained site personnel.

In the event that oil reaches the nearest storm drain, the transformer set is situated within storm sewer shed 10; drainage from this area is controlled on-site by a sluice gate equipped with an underflow oil baffle. These collective infrastructure features and active secondary containment measures provide sufficient secondary containment for the transformer set to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

## 5. Direction of Flow:

If a leak were to develop from one of the transformers and/or a load tap changer, the oil would be collected in the crushed stone and in the macadam dike. The oil would remain in this area until the spill is identified and cleanup actions are initiated. If one of the transformers were to rupture, some of the oil could spray outside the diked area. Depending on which transformer ruptured, some of the oil could reach the storm drain located approximately 10 feet northwest of the "C" transformer, which flows to gate 10.

## J. Building 62 Transformer

1. Location: This transformer is located north of Building 62E. The transformer is an oil-filled electrical equipment piece. The transformer location is shown on the Facility Diagram with a designation of T9.

2. Contents: 10-C oil

3. Capacity: 210 gallons

## 4. Containment System and Measures:

This transformer is surrounded by a macadam dike. In the event of oil leakage, initial quantities of the oil would be contained within the macadam dike and begin to infiltrate downward into the ground. A larger quantity of leaked oil may lead to a release of oil outside of the macadam dike. A larger quantity of oil loss from the transformer would likely result in failure of the transformer, which would then likely result in a loss of electrical power to portions of the facility infrastructure. This loss of power would cause an almost immediate personnel response to identify the cause of the power loss, resulting in prompt identification of the emergent oil leak followed by immediate response actions by trained site personnel.

In the event that oil reaches the nearest storm drain, the transformer is situated within storm sewer shed 10; drainage from this area is controlled on-site by a sluice gate equipped with an underflow oil baffle. These collective infrastructure features and active secondary containment measures provide sufficient secondary containment for the transformer set to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

## 5. Direction of Flow:

If a leak were to develop from the transformer, some of the oil would be contained in the macadam dike. The rest of the oil would likely collect on the grassy area, which surrounds the macadam dike. The oil would likely remain in this area until the spill is identified and cleanup actions are initiated.

**K. Building M1 Transformer**

1. Location: This transformer is located north of Building M1. The transformer is an oil-filled electrical equipment piece. The transformer location is shown on the Facility Diagram with a designation of T10.
2. Contents: Silicone oil
3. Capacity: 200 gallons
4. Containment System and Measures:

A macadam dike filled with crushed rock surrounds this transformer. In the event of oil leakage, initial quantities of the oil would be contained within the macadam dike and begin to infiltrate downward into the crushed rock void spaces and the underlying ground. A larger quantity of leaked oil may lead to a release of oil outside of the macadam dike. A larger quantity of oil loss from the transformer would likely result in failure of the transformer, which would then likely result in a loss of electrical power to portions of the facility infrastructure. This loss of power would cause an almost immediate personnel response to identify the cause of the power loss, resulting in prompt identification of the emergent oil leak followed by immediate response actions by trained site personnel.

In the event that oil reaches the nearest storm drain, the transformer is situated within storm sewer shed 3; drainage from this area is controlled on-site by a sluice gate equipped with an underflow oil baffle. These collective infrastructure features and active secondary containment measures provide sufficient secondary containment for the transformer set to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.
5. Direction of Flow:

If a leak were to develop from the transformer, the oil would likely be contained in the macadam dike. The oil would likely collect on the crushed rock contained within the macadam dike. The oil would likely remain in this area until the spill is identified and cleanup actions are initiated.

**L. SWTF Transformer**

1. Location: This transformer is located north of Building 109. The transformer is an oil-filled electrical equipment piece. The transformer location is shown on the Facility Diagram with a designation of T8.
2. Contents: Insulating oil
3. Capacity: 420 gallons

## 4. Containment System and Measures:

A concrete dike filled with crushed rock surrounds this transformer. In the event of oil leakage, initial quantities of the oil would be contained within the concrete dike and begin to infiltrate downward into the crushed rock void spaces and the underlying ground. A larger quantity of leaked oil may lead to a release of oil outside of the concrete dike. A larger quantity of oil loss from the transformer would likely result in failure of the transformer, which would then likely result in a loss of electrical power to portions of the facility infrastructure. This loss of power would cause immediate personnel response to identify the cause of the power loss, resulting in prompt identification of the emergent oil leak followed by immediate response actions by trained site personnel.

In the event that oil reaches the nearest storm drain, the transformer is situated within storm sewer shed 10; drainage from this area is controlled on-site by a sluice gate equipped with an underflow oil baffle. These collective infrastructure features and active secondary containment measures provide sufficient secondary containment for the transformer set to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

## 5. Direction of Flow:

If a leak were to develop from the transformer, the oil would likely be contained in the macadam dike. The oil would likely collect on the crushed rock contained within the macadam dike. The oil would likely remain in this area until the spill is identified and cleanup actions are initiated.

## 3. MARF PLANT

## A. MARF Prototype Lubricating Oil System

1. Location: Building 77. The location of the lubricating oil system is shown on the Facility Diagram with a designation of Stationary Operating Equipment (SOE) 1.
2. Contents: 2190 TEP lubricating oil
3. Capacity: 10,300 gallons
4. Installation Date: Early 1970's.
5. Construction: Steel/Carbon Steel
6. Use: Source of lubricant for equipment in the facility. The lubricating oil system is a stationary closed-loop oil-filled operating system.

7. **Containment System and Measures:**  
The lubricating oil system is wholly contained within an enclosed structure (Building 77). The lubricating oil system consists of several oil reservoirs with interconnecting piping. All of these reservoirs have level indication, which is monitored on an hourly basis. Several of these reservoirs have low level/low system pressure alarms, which would notify the operator of a potential leak. The reservoirs are located in a continuously manned space. Building 77 is situated within storm sewer shed 5; drainage from this area is controlled on-site by a sluice gate equipped with an underflow oil baffle. These collective infrastructure features and active secondary containment measures provide sufficient secondary containment for the lubricating oil system to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.
8. **Associated Transfer Piping:**  
The piping is steel/carbon steel and runs inside the building. The piping is supported through the use of metal stanchions. Details about the piping are located in the MARF Power Plant Systems Manual.
9. **Oil Reservoir Filling Operations:**  
The system is filled by commercial trucks or from 55-gallon drums in accordance with a procedure in the MARF Power Plant Systems Manual.

If the reservoirs are filled from a commercial tank truck, this transfer occurs at designated Tank Truck Unloading Area C. The tank truck (i.e., cargo tank) is parked wholly inside a portable secondary containment designed to hold at least the largest total actual verified quantity of oil contained within any compartment of the unloading cargo tank. The integrity of portable secondary containment is inspected before use/delivery. At least one set of tires are chocked front and back to prevent truck movement during filling operations. The tank trucks are equipped with transfer pumps and flexible hoses. Personnel are stationed at the respective reservoir level indicator, the reservoir fill connection and with the carrier driver at the cargo tank emergency shutoff switch, such that the carrier driver is in direct continuous radio communication with the continuously-attended reservoir level indicator at all times.

The storm drain in this area is covered during filling evolutions to prevent the diesel fuel from entering the site storm drain system. The fill hoses are equipped with quick disconnect type fittings to ensure the hoses do not disengage during a filling evolution.

Any oil leaks or spills to the containment systems will be removed within 24 hours of discovery. In the event an oil delivery occurs during a precipitation event, trained personnel will evaluate any water accumulated in the containment system for a visible oil sheen prior to discharge. Should a sheen be present, the oil will be removed from the water using

appropriate absorbent materials until the sheen is completely removed. Discharge of stormwater from the secondary containment system is prohibited during a precipitation event. Discharges will only commence upon approval from a trained, authorized staff member that water is free from visible oil sheen and weather conditions are suitable for discharge.

If the reservoirs are filled from 55-gallon drums, the drums are maintained on portable secondary containments during the filling evolution. This evolution takes place inside the building. A portable pump and hose are used to transfer the lubricating oil from the drum to the system. Reservoir overfill is prevented through the use of direct communication via sound powered phones or radios between the reservoir gauger and the person pumping the drums to continuously monitor level indication. Reservoir filling operations are continuously monitored and pumping would be secured to prevent a major spill from occurring should a leak develop.

10. Safety Systems:

This lubricating oil system consists of several reservoirs with interconnecting piping. All of these reservoirs have level indication, which is monitored on an hourly basis. Several of these reservoirs have low level/low system pressure alarms, which would notify the operator of a potential leak. These reservoirs are located in a continuously manned space. Spill control equipment is maintained on-site to support the containment and cleanup of a spill.

11. Spill Potential and Direction of Flow:

i. Spill Potential

A spill could occur during filling evolutions and due to leaks in piping, equipment, or reservoirs.

ii. Direction of Flow:

A spill during a filling evolution could vary from drops/minute to an instantaneous release of 55 gallons from the rupture of a drum. This lubricating oil would flow onto the floor and could leave the building via the west rollup door. Since this evolution is continuously monitored, the filling evolution would be immediately secured and corrective actions taken to contain and cleanup the spill. There is a minimal chance that some oil could reach the culvert west of the facility and enter the site storm drain system at gate 5.

A spill from the system reservoirs or equipment could vary from a rate of drops/minute to an instantaneous release of 4,600 gallons, which is the capacity of the largest tank. The oil could flow in several directions depending on the location of the spill. Potentially affected areas are continuously manned, therefore releases of oil would be quickly identified and actions would then be initiated to contain and cleanup the spill. During a reservoir

rupture, some of the oil would be contained in a concrete trench inside the building. Depending on the location of the leak, some of the oil could leave the building through one of three doors. Oil leaving through the west rollup door would flow towards the culvert located west of the facility and if unmitigated would enter the site storm drain system. Oil leaving the facility through the northwest door would flow into a concrete basement in Building 77A. The basement has a drain sump, which is manually operated. Thus the oil would be contained in this basement until cleanup is complete. The last way for the oil to leave the facility is through the northeast door. Oil leaving the door would flow directly into the site storm drain system at gate 5.

B. Fuel Oil Transfer – Loading of Exempt Tank 28

Exempt Tank 28 (the MARF Underground Storage Tank for the MARF Emergency Diesel Generator) is filled by commercial tank trucks. The oil transfer occurs at designated Tank Truck Unloading Area C (shown on the Facility Diagram), using a portable secondary containment structure. The minimum tank truck unloading procedures detailed in Section 3.6, below, are followed for this oil transfer activity.

C. Building 77 Oil Drum Storage

Storage of 55-gallon oil drums occurs at three locations within the first floor of Building 77.

Storage of new oil, used oil, and oily water in 55-gallon drums occurs at the MARF Engine Room Starboard Side location. This location is shown on the Facility Diagram with a designation of DSA 1. The design capacity for this oil drum storage area is 16 55-gallon drums.

Storage of used oil and oily water in 55-gallon drums occurs at the MARF Engine Room Opposite Oil Skimmer location. This location is shown on the Facility Diagram with a designation of DSA 2. The design capacity for this oil drum storage area is one 55-gallon drum.

Storage of used oil and oily water in 55-gallon drums occurs at the MARF Engine Room Main Engine Lube Oil Drain location. This location is shown on the Facility Diagram with a designation of DSA 3. The design capacity for this oil drum storage area is four 55-gallon drums.

All oil drums are stored on designed secondary containment structures sized to contain at least the capacity of the single largest drum stored on the structure. The oil drums are stored in an upright position with the bungs tightly closed except when oil is being added to or removed from the drums.

Any leakage from the oil drum would be contained within the underlying secondary containment structure and pumped to appropriate containers.

Spills from these drums would most likely occur during transport of the containers from Building 77 or when oil is being added to the container. During both of these evolutions personnel are present who would identify and initiate corrective actions for the spill. Depending where on the facility the spill occurs, some oil could enter the site storm drain system. As described in Section 1.5 above, drainage from the site areas encompassed by storm sewer sheds 3, 4, 5, and 10 is controlled by sluice gates equipped with underflow oil baffles. The underflow oil baffles serve to contain any incidental floating oil upstream of the sluice gate discharge, retaining the oil to allow for its manual collection and removal from the drainage system.

D. (Deleted)

E. Building 111 Elevator

The Building 111 elevator is an oil-filled operating equipment system that uses hydraulic oil for operation of the elevator. The elevator hydraulic system is a closed-looped system having a design capacity of 110 gallons. The location of the elevator is shown on the Facility Diagram with a designation of Elevator (ELE) 111.

The elevator system and associated elevator shaft is situated within interior structural enclosures that do not include any floor drains. By inspection, oil leakage from the hydraulic oil reservoir would be completely contained within the immediate elevator room. The elevator is located within storm sewer shed 4; drainage from this area is controlled on-site by a sluice gate equipped with an underflow oil baffle. These collective infrastructure features provide sufficient secondary containment for the elevator to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

F. SAR Transformer

1. Location: Southwest corner of Building 20 in Area 40. The transformer is an oil-filled electrical equipment piece. The transformer location is shown on the Facility Diagram with a designation of T6.
2. Contents: 10-C oil
3. Capacity: This unit consists of two oil-filled electrical equipment pieces. The capacity of these two pieces is as follows:

Main Transformer – 5480 gallons  
Load Tap Changer – 180 gallons  
Total capacity - 5660 gallons

## 4. Containment System and Measures:

The transformer and load tap changer are surrounded by a macadam dike filled with crushed rock. In the event of oil leakage, initial quantities of the oil would be contained within the macadam dike and begin to infiltrate downward into the crushed rock void spaces and the underlying ground. A larger quantity of leaked oil may lead to a release of oil outside of the macadam dike. A larger quantity of oil loss from any of the individual equipment pieces would likely result in failure of the equipment piece, which would then likely result in a loss of electrical power to portions of the facility infrastructure. This loss of power would cause an almost immediate personnel response to identify the cause of the power loss, resulting in prompt identification of the emergent oil leak followed by immediate response actions by trained site personnel.

In the event that oil reaches the nearest storm drain, the transformer set is situated within storm sewer shed 4; drainage from this area is controlled on-site by a sluice gate equipped with an underflow oil baffle. These collective infrastructure features and active secondary containment measures provide sufficient secondary containment for the transformer set to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

## 5. Direction of Flow:

If a leak were to develop from the transformer and/or the load tap changer, the oil would collect in the crushed rock area, which surrounds these units. If the transformer were to rupture, some of the oil could spray onto the road outside the diked area. The oil would remain in these areas until the spill is identified and cleanup actions are initiated. Some of the oil could enter the site storm drain system at gate 4.

## G. Building 71 Lighting Transformer

1. Location: Northwest corner of Building 71. The transformer is an oil-filled electrical equipment piece. The transformer location is shown on the Facility Diagram with a designation of T7.

2. Contents: 10-C oil

3. Capacity: 500 gallons

## 4. Containment System and Measures:

This transformer is surrounded by crushed rock. In the event of oil leakage, initial quantities of the oil would collect within the crushed rock area and begin to infiltrate downward into the crushed rock void spaces and the underlying ground. A larger quantity of leaked oil may lead to a release of oil outside of the crushed rock area. A larger quantity of oil loss from either of the two individual equipment pieces would likely result in failure of the equipment piece, which would then likely result in a loss of

electrical power to portions of the facility infrastructure. This loss of power would cause an almost immediate personnel response to identify the cause of the power loss, resulting in prompt identification of the emergent oil leak followed by immediate response actions by trained site personnel.

In the event that oil reaches the nearest storm drain, the transformer is situated within storm sewer shed 5; drainage from this area is controlled on-site by a sluice gate equipped with an underflow oil baffle. These collective infrastructure features and active secondary containment measures provide sufficient secondary containment for the transformer set to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

5. Direction of Flow:

If a leak were to develop from this transformer, the oil would collect in the crushed rock. The oil would remain in this area until the spill is identified and cleanup actions are initiated. If the transformer were to rupture, some of the oil could flow into the roadway and into the storm drain located approximately 8 feet west of the transformer, which drains to gate 5.

4. S8G PLANT

A. Diesel Generator Fuel Oil Storage Tanks (NYS Registered Tanks #012 & #013)

1. Location: Inside of Building 81. The tank locations are shown on the Facility Diagram with a designation of SAST 12 and SAST 13.
2. Contents: Diesel Fuel Oil
3. Capacity: Two identical tanks each with a capacity of 5,000 gallons.
4. Installation Date: 1/76
5. Construction:
  - Aboveground steel mounted on a steel saddle atop a concrete pedestal
  - No internal protection
  - Painted exterior surface
  - Factory built
  - Equipped with a direct-read product level gauge
6. Use: Supply diesel fuel oil to their respective downstream diesel generator day tanks, which supply the fuel oil to their respective diesel generator. The tank pumping/dispensing method is suction.

7. Containment System:

These two similar 5,000 gallon diesel fuel tanks are each situated within individual dimensionally-similar reinforced concrete dikes, within an interior building location. The concrete dikes provide a secondary containment volume of 5,800 gallons; calculations are provided in Attachment 8.5.

The ends of the fill connections are plugged to prevent system leakage. In addition, containers are maintained under the plugs in the end of the fill connections to collect leakage that may occur. These fill connections are enclosed by a roof and have a concrete secondary containment underneath them to collect any leakage during tank filling evolutions. The vent/overflow lines for these tanks are located outside, but the overflow pipes are capped except during tank filling evolutions. A 55-gallon drum is placed under these lines to provide a secondary containment when the caps are removed to support tank-filling evolutions.

8. Associated Transfer Piping:

All piping is aboveground and made of painted steel, and with the exception of the filling connections and tank vent/overflow lines, is located inside Building 81.

9. Storage Tank Filling Operations:

The procedure for filling these tanks is contained in the S8G Power Plant Systems Manual. The tanks are filled by commercial trucks, which are equipped with transfer pumps and flexible hoses. These trucks are parked in a portable secondary containment, which will hold at least the largest total actual verified quantity of oil contained within any compartment of the unloading tank truck. The integrity of portable secondary containment is inspected before use/delivery. The truck wheels are chocked to prevent truck movement during filling operations. The fill hoses are equipped with fittings to ensure the hoses do not disengage during a filling evolution. Tank overfill is prevented through the use of a direct audible or code signal between the tank gauger and the pump operator to continuously monitor tank level. The filling evolutions are continuously monitored and fuel transfer is secured to prevent a major spill from occurring should a leak develop.

The tank truck unloading activity for fueling the two tanks occurs at designated Tank Truck Loading/Unloading Area B; this designated area is shown on the Facility Diagram.

Any oil leaks or spills to the containment systems will be removed within 24 hours of discovery. In the event a fuel delivery occurs during a precipitation event, trained personnel will evaluate any water accumulated in the containment system for a visible oil sheen prior to discharge. Should a sheen be present, the oil will be removed from the water using appropriate absorbent materials until the sheen is completely removed.

Discharge of stormwater from the secondary containment system is prohibited during a precipitation event. Discharges will only commence upon approval from a trained, authorized staff member that water is free from visible oil sheen and weather conditions are suitable for discharge.

10. Safety Systems:

The tanks have level indicators. Two storm drains, located approximately 30 feet north and south of the filling station, are sealed with drain covers during filling evolutions. Spill control equipment is maintained on site to support the containment and cleanup of a spill.

11. Spill Potential and Direction of Flow:

i. Spill Potential:

A spill could occur during filling evolutions or due to leaks in piping, equipment or the tank.

ii. Direction of Flow:

A spill during a filling evolution could be at a rate of drops/minute to gallons/minute depending on the location of the spill. A spill from the delivery truck would be contained in the portable secondary containment. A spill from the transfer hose would collect in the drip tray located below the fill connections or in the paved depression located in the area surrounding the fill connections. Since the filling evolution is continuously monitored, the filling evolution would be immediately secured once a leak occurred. Since the filling evolution would be immediately secured, the amount of oil spilled would be minimal and contained within the depression area. In the unlikely event that the oil spill was not contained, some of the fuel oil could enter into the storm drain system and drain to sluice gate 4, where it would be retained by the gate's underflow oil baffle.

A spill from the tanks or from the piping in the storage tank room would be at a rate of drops/minute to gallons/minute based on the severity of the leak. A leak from the tank would be contained within the concrete secondary containment. A leak from the piping located outside the secondary containment could flow out the room door into the hallway between the storage tank room and the diesel room. Some of this oil would also flow into the room below the diesel storage tank room, where it would be contained. The oil that enters the hallway, if uncontrolled, could flow out the Building 81 west door into the paved depression located outside the building. While unlikely, if the spill was not identified and enough oil was spilled to fill the depression area, some oil could enter the storm drain system and drain to sluice gate 4, where it would be retained by the gate's underflow oil baffle.

## B. Diesel Generator Fuel Oil Day Tanks (NYS Registered Tanks #014 &amp; #015)

1. Location: Inside of Building 81. The tank locations are shown on the Facility Diagram with a designation of SOE 14 and SOE 15.
2. Contents: Diesel fuel oil
3. Capacity: Two identical tanks each with a capacity of 550 gallons each.
4. Installation Date: 1/76
5. Construction:
  - Aboveground steel
  - No internal protection
  - Painted exterior surface
  - Factory built
6. Use: Supplies fuel oil to their respective downstream S8G diesel generators. The tank pumping/dispensing method is suction. The day tanks are not bulk storage containers; rather, by their in-line process nature, they are oil-filled operating equipment pieces.

7. Containment System:

These tanks are located inside Building 81. There are no floor drains located in the rooms where these tanks are located.

The various safety systems and controls provided for the tanks is detailed below, as well as estimates of the oil spill potential and direction of flow. This information indicates that the Building 81 infrastructure will provide a means of diversion for much if not all of the released oil. In the unlikely event that oil discharged from either of the two day tanks reaches sluice gate 4, the oil would be retained behind the gate's underflow oil baffle.

These collective infrastructure features and active secondary containment measures provide sufficient secondary containment for each of the two day tanks to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

8. Associated Transfer Piping:

All piping is painted steel and located inside the building. All pipes are routed aboveground and are supported by pipe stanchions/brackets.
9. Day Tank Filling Operations:

These tanks are automatically filled from the diesel fuel oil storage tanks. Tank overfill is prevented by an automatic level control system. This system secures the diesel fuel oil transfer pump when the tanks reach their operating capacity.

## 10. Safety Systems:

A high-level automatic cutout switch secures flow when the tanks reach their operating capacity. Additionally, a high level alarm is installed which sounds an alarm on a continually manned operator control panel if the operating capacity is exceeded. In the unlikely event that both systems fail, the tank overflow is routed back to the storage tank. Spill control equipment is maintained on site to support the containment and cleanup of a spill.

## 11. Spill Potential and Direction of Flow:

## i. Spill Potential:

A spill could occur during filling operations or due to leaks in piping, equipment or the tanks.

## ii. Direction of Flow:

A spill from the tank or the piping located in the diesel room could vary at a rate of drops/minute to an instantaneous loss of 550 gallons, which is the capacity of one tank. The oil would collect on the floor of the room and if enough oil spilled would flow out the door into the hallway between the diesel room and the storage tank room. The oil that enters the hallway, if uncontrolled, could flow out the Building 81 west door into the paved depression located outside the building. A rupture of the tank would result in the tank automatic fill system operation, which would add more oil to the spill. This rupture would also result in a tank low level alarm, which would alert the operator to the anomaly. The operators are trained to investigate this alarm and would identify and take actions for the spill.

The worse case spill is a leak from the piping between the storage tank room and the diesel room, while a tank filling operation is occurring. The oil in the hallway, if uncontrolled, could flow out the Building 81 west door into the paved depression located outside the building. While unlikely, if the spill was not identified and enough oil was spilled to fill the depression area, some oil could enter the storm drain system and drain to sluice gate 4, where it would be retained by the gate's underflow oil baffle.

## C. Emergency Diesel Generators #1 and #2

1. Location: Inside of Building 81. The locations of the two equipment pieces are shown on the Facility Diagram with a designation of SOE 3 and SOE 4.
2. Contents: Lubricating oil
3. Capacity: Two lubricating oil sumps each with a capacity of 400 gallons each.

4. Installation Date: 1/76
5. Construction: Steel
6. Use: Utilizes lubricating oil in a closed-loop system. This is oil-filled operational equipment.
7. Containment System:  
These emergency diesel generators (EDGs) and their integral lubricating oil systems are located inside Building 81. There are no floor drains located in the rooms where these tanks are located.

The various safety systems and controls provided for each of the EDGs tanks is detailed below, as well as estimates of the oil spill potential and direction of flow. This information indicates that the Building 81 infrastructure will provide a means of diversion for much if not all of the released oil. In the unlikely event that oil discharged from either of the two EDGs reaches sluice gate 4, the oil would be retained behind the gate's underflow oil baffle.

These collective infrastructure features and active secondary containment measures provide sufficient secondary containment for each of the two EDGs to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

8. Associated Transfer Piping:  
All piping is steel and located inside the building. All pipes are routed above ground and are supported by pipe stanchions/brackets.
9. Sump Filling Operations:  
The EDG lubricating oil sumps are filled from portable containers using portable transfer pumps and hoses. Sump overfill is prevented by the person filling the sump directly monitoring the sump level and securing the filling evolution prior to sump overflow. Sump filling operations are continuously monitored and pumping would be secured to prevent a major spill from occurring should a leak develop.
10. Safety Systems:  
Each sump has a level indication, which is monitored at a minimum of every eight hours when the generator is secured and every hour when the generator is in operation. When the generator is in operation there is a low lubricating oil pressure alarm on the generator, which would notify the operator of a potential spill/loss of lubricating oil. The operators are trained to investigate this alarm and would identify and isolate the leak. Spill control equipment is maintained on site to support the containment and cleanup of a spill.

11. Spill Potential and Direction of Flow:
  - i. Spill Potential:

A spill could occur during filling evolutions or due to leaks in piping, equipment, or the sump.
  - ii. Direction of Flow:

A spill from the sump or the piping located in the diesel room could vary at a rate of drops/minute to an instantaneous loss of 400 gallons, which is the capacity of one sump. The oil would collect on the floor of the room and if enough oil spilled would flow out the door into the hallway between to diesel room and the storage tank room. The oil that enters the hallway, if uncontrolled, could flow out the Building 81 west door into the paved depression located outside the building. If the generator were in operation, this rupture would also result in a low lube oil pressure alarm, which would alert the operator to the anomaly. The operators are trained to investigate this for the spill. While unlikely, if the spill was not identified and enough oil was spilled to fill the depression area, some oil could enter the storm drain system and drain to sluice gate 4, where it would be retained by the gate's underflow oil baffle.

D. S8G Prototype Lubricating Oil System

1. Location: Inside of Building 80. The location of the lubricating oil system is shown on the Facility Diagram with a designation of SOE 2.
2. Contents: Lubricating Oil
3. Capacity: Several integral systems and associated reservoirs with a total capacity of 11,100 gallons.
4. Installation Date: 1/76
5. Construction: Steel
6. Use: Supplies lubricating oil to equipment in the facility. This system is oil-filled operational equipment.
7. Containment System:

The reservoirs and associated piping are contained within the prototype metal hull with the exception of the fill connection, which is located outside the hull. The end of the fill connection piping is plugged and wrapped in a polyethylene bag when not in use.

The various safety systems and controls provided for each of the prototype lube oil systems is detailed below, as well as estimates of the oil spill potential and direction of flow. This information indicates that the

Building 80 infrastructure will provide a means of diversion for all of the released oil.

These collective infrastructure features and active secondary containment measures provide sufficient secondary containment for the prototype lube oil system to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

8. Associated Transfer Piping:

All piping is made of steel. All pipes are routed above ground and are supported by pipe stanchions/brackets.

9. Reservoir Filling Operations:

The procedure for filling the reservoirs is contained in the S8G Power Plant Manual. The reservoirs are filled by commercial cargo tank trucks or from 55-gallon drums. The trucks are equipped with transfer pumps and flexible hoses. These trucks are parked in a portable secondary containment which will hold at least the largest total actual verified quantity of oil contained within any compartment of the unloading tank truck. The integrity of portable secondary containment is inspected before use/delivery. The truck wheels are chocked to prevent truck movement during filling operations. The fill hoses are equipped with quick disconnect type fittings to ensure the hoses do not disengage during a filling evolution. The drums are maintained on portable secondary containments during the filling evolution. Tank overfill is prevented through the use of direct communication via sound powered phones or radios between the tank gauger and the person pumping the truck to continuously monitor tank level. Tank filling operations are continuously monitored and pumping would be secured to prevent a major spill from occurring should a leak develop.

The tank truck unloading activity for loading the lube oil reservoirs by commercial tank truck occurs at designated Tank Truck Loading/Unloading Area D; this designated area is shown on the Facility Diagram.

As described above, loading of the lube oil reservoirs from commercial tank truck occurs through a remote fill port. This remote fill port is shown on the Facility Diagram with a designation of RFP 2.

Any oil leaks or spills to the containment systems will be removed within 24 hours of discovery. In the event a fuel delivery occurs during a precipitation event, trained personnel will evaluate any water accumulated in the containment system for a visible oil sheen prior to discharge. Should a sheen be present, the oil will be removed from the water using appropriate absorbent materials until the sheen is completely removed. Discharge of stormwater from the secondary containment system is prohibited during a precipitation event. Discharges will only commence

upon approval from a trained, authorized staff member that water is free from visible oil sheen and weather conditions are suitable for discharge.

10. Safety Systems:

All the reservoirs associated with this system have level indication, which are monitored on an hourly basis. Several of the reservoirs have low level/low pressure alarms, which would notify the operator of an anomaly. These reservoirs are located in a continuously manned space. Spill control equipment is maintained on site to support the containment and cleanup of a spill.

11. Spill Potential and Direction of Flow:

i. Spill Potential:

A spill could occur during filling evolutions or due to leaks in piping, equipment, or the reservoirs.

ii. Direction of Flow:

A spill during a filling evolution could vary from drops/minute to an instantaneous release of 55 gallons from the rupture of a drum, or the largest compartment of the tanker truck. This lubricating oil would flow onto the concrete pad under the fill connection. Since this evolution is continuously monitored, the filling evolution would be immediately secured and corrective actions taken to contain and cleanup the spill. No oil would be released into the Site storm drain system as a result of this type of spill.

A spill from the system reservoirs or equipment could vary from a rate of drops/minute to an instantaneous release of 2,800 gallons, which is the capacity of the largest reservoir. The oil would all be contained within the prototype hull. These areas are continuously manned, therefore a large release of oil should be quickly identified and actions initiated to contain and cleanup the spill.

E. Waste Oil Collection Tank

The 500-gallon Waste Oil Collection Tank is situated within the Building 81 basement. The tank is an in-line process component of the combined wastewater collection and management system for Buildings 80 and 81. Specifically, the tank accumulates oil separated and removed from the collected wastewater at a process end-point, for subsequent offsite management as used oil. The tank location is shown on the Facility Diagram with a designation of SAST WOT.

The S8G Waste Oil Collection Tank is part of the S8G Bilge Drainage and Processing System, a wastewater collection and treatment system. The Waste Oil Collection Tank is included in this SPCC Plan consistent with EPA's SPCC wastewater treatment exemption.

The tank is of painted steel/carbon steel construction and is provided with a direct-read wall-mounted level indicator. The tank is mounted on a welded-steel saddle system installed on a reinforced concrete floor. The tank was installed in the late 1970s.

The drainage connection for the 500-gallon Waste Oil Collection Tank is located outside. The piping is supported through the use of metal stanchions. Details about the tank's piping system are located in the S8G Prototype Support Systems Manual.

The oil in the 500-gallon Waste Oil Collection Tank is pumped into 55-gallon drums through an outside connection using a portable fill hose. These oil transfers are continuously monitored and pumping would be secured to prevent a major spill from occurring should a leak develop. Overfilling of the drums is prevented through the use of direct communication via sound powered phones or radios between the drum gauger and the used oil pump operator. The drums sit on top of portable secondary containments. The designated location for this oil transfer area is shown on the Facility Diagram with a designation of Oil Transfer Area (OTA) 1.

The tank has level indication, which is monitored every four hours. Also, the tank has a high level alarm, which notifies the operator that the tank is reaching full capacity.

The drain connection for the 500-gallon Waste Oil Collection Tank is normally isolated and depressurized and the connection is plugged to prevent any spills when the connection is not in use. Spill control equipment is maintained on site to support the containment and cleanup of a spill.

A spill from the 500-gallon Waste Oil Collection Tank and/or associated piping would vary in rate from drops/minute to an instantaneous spill of the total 500 gallon tank capacity. This tank is located in the basement of Building 81. The only floor drain in this room returns any oil back to the surge sumps. The oil would be contained in the basement until the spill was identified by the operator during routine tours of the area. The operator would then initiate corrective actions for the spill. No oil would enter the site storm drain system.

A spill during the draining of the 500-gallon Waste Oil Collection Tank could vary in rate from drops/minute to gallons/minute depending on the severity of the leak. Since this evolution is continuously monitored, the evolution would be immediately secured once the leak occurred. Thus the extent of the spill would be limited and no oil is expected to enter the site storm drain system.

These collective infrastructure features and active secondary containment measures for the 500-gallon Waste Oil Collection Tank, as detailed above, provide sufficient secondary containment for the Waste Oil Collection Tank to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

**F. Building 81 Drum Storage**

Building 81 is used to store 55-gallon drums of new oil, used oil, and oily water. The location of this oil drum storage area is shown on the Facility Diagram with a designation of Drum Storage Area (DSA) 9. The design capacity of this oil drum storage area is 30 55-gallon drums.

All oil drums are stored on designed secondary containment structures sized to contain at least the capacity of the single largest drum stored on the structure. The oil drums are stored in an upright position with the bungs tightly closed except when oil is being added to or removed from the drums.

Any leakage from the oil drum would be contained within the underlying secondary containment structure and pumped to appropriate containers. Spills from these drums would most likely occur during transport of the containers from Building 81 or when oil is being added to the container. During both of these evolutions personnel are present who would identify and initiate corrective actions for the spill. Depending where on the facility the spill occurs, some oil could enter the site storm drain system. As described in Section 1.5 above, drainage from the site areas encompassed by storm sewer sheds 3, 4, 5, and 10 is controlled by sluice gates equipped with underflow oil baffles. The underflow oil baffles serve to contain any incidental floating oil upstream of the sluice gate discharge, retaining the oil to allow for its manual collection and removal from the drainage system.

**G. S8G Cooling Tower Transformers (TF-6 and TF-7)**

1. Location: These two transformers are located Northeast of Building 84A. The transformers are oil-filled electrical equipment pieces. The location of the two transformers are shown on the Facility Diagram with a designation of T1 (TF-6) and T2 (TF-7).
2. Contents: 10-C oil
3. Capacity: This area consists of two transformers each with a capacity of 181 gallons.
4. Containment System:  
These transformers are located on a small concrete pad, which is surrounded by a macadam dike, which is filled with dirt/grass. In the event of oil leakage, initial quantities of the oil would be contained within the macadam dike and begin to infiltrate downward into the underlying ground. A larger quantity of leaked oil may lead to a release of oil outside of the macadam dike. A larger quantity of oil loss from any of the individual equipment pieces would likely result in failure of the equipment piece, which would then likely result in a loss of electrical power to portions of the facility infrastructure. This loss of power would cause an almost immediate personnel response to identify the cause of the power

loss, resulting in prompt identification of the emergent oil leak followed by immediate response actions by trained site personnel.

The two transformers are situated within the storm sewer shed for sluice gate 2; drainage from this area is controlled on-site by a sluice gate equipped with an underflow oil baffle. These collective infrastructure features and active secondary containment measures provide sufficient secondary containment for the two transformers to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

5. Direction of Flow:

If a leak were to develop from one of the transformers, the oil would collect in the grassy area adjacent to the concrete base. If the transformer were to rupture some oil could spray onto the grassy area that surrounds the transformer. The oil would likely remain in these areas until the spill is identified and cleanup actions are initiated.

H. 34.5 KV Transformer

1. Location: South of Building 17 in Area 23. The transformer equipment pieces are oil-filled electrical equipment pieces. The location of this transformer unit is shown on the Facility Diagram with a designation of T3.

2. Contents: Mineral oil is used in the main transformer and the load tap changer. 10-C oil is used in the current transformers and the R9 circuit breaker.

3. Capacity: This unit consists of several items. A list of these items and their capacity is as follows:

Main Transformer – 1924 gallons

Load Tap Changer – 184 gallons

Current Transformers – 2 devices with a capacity of 15 gallons each

R9 Circuit Breaker – 3 containers with a capacity of 81 gallons each

Total Capacity – 2381 gallons

4. Containment System:

The main transformer and the load tap changer are surrounded by a concrete curb. The concrete curb base is lined with crushed rock. Assuming a 33% void space in the crushed rock, the curbed area will hold 3200 gallons of oil. A macadam dike which is filled with crushed rock surrounds this concrete curb and also surrounds the current transformers. There is no direct secondary containment immediately surrounding the R9 circuit breaker. The area surrounding this device is covered in crushed rock.

In general, a larger quantity of leaked oil may lead to a release of oil outside of the macadam dike. A larger quantity of oil loss from any of the individual equipment pieces would likely result in failure of the equipment piece, which would then likely result in a loss of electrical power to portions of the facility infrastructure. This loss of power would cause an almost immediate personnel response to identify the cause of the power loss, resulting in prompt identification of the emergent oil leak followed by immediate response actions by trained site personnel.

In the event that oil reaches the nearest storm drain, the transformer set is situated within storm sewer shed 10; drainage from this area is controlled on-site by a sluice gate equipped with an underflow oil baffle. These collective infrastructure features and active secondary containment measures provide sufficient secondary containment for the transformer set to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

5. Direction of Flow:

If a leak develops from the main transformer and/or the load tap changer, the majority of the oil will collect inside the concrete secondary containment. If the transformer were to rupture, some oil may spray over into the crushed rock area that surrounds the secondary containment. Oil from the current transformers or the circuit breaker would collect in the crush rock which surrounds these devices. The oil would remain in these areas until the spill is identified and cleanup actions are initiated. Normally, no oil will enter the site discharge system. If a leak occurred during a period of heavy rain, some oil could be flushed from the crushed rock and could flow into the site storm drain system at gate 10.

1. S8G Transformer A

1. Location: This transformer is located east of building 73C in area 85. The transformer equipment pieces are oil-filled electrical equipment. The location of this transformer set is shown on the Facility Diagram with a designation of T4.
2. Contents: 10-C oil
3. Capacity: This unit consists of two items. The capacity of these items is as follows:

Main Transformer – 3830 gallons  
Load Tap Changer – 150 gallons  
Total capacity - 3980 gallons

## 4. Containment System:

The transformer and the load tap changer are surrounded by a macadam dike, which is filled with crushed rock. In the event of oil leakage, initial quantities of the oil would be contained within the macadam dike and begin to infiltrate downward into the crushed rock void spaces and the underlying ground. A larger quantity of leaked oil may lead to a release of oil outside of the macadam dike. A larger quantity of oil loss from the transformer and/or load tap changer would likely result in failure of the equipment pieces, which would then likely result in a loss of electrical power to portions of the facility infrastructure. This loss of power would cause an almost immediate personnel response to identify the cause of the power loss, resulting in prompt identification of the emergent oil leak followed by immediate response actions by trained site personnel.

In the event that oil reaches the nearest storm drain, the transformer and load tap changer are situated within storm sewer shed 4; drainage from this area is controlled on-site by a sluice gate equipped with an underflow oil baffle. These collective infrastructure features and active secondary containment measures provide sufficient secondary containment for the equipment pieces to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

## 5. Direction of flow:

If a leak were to develop from the transformer and/or the load tap changer, the oil would collect in the crushed rock area that surrounds the transformer. The oil would remain in this area until the spill is identified and cleanup actions are initiated. If the transformer and/or load tap changer were to rupture, some oil could spray onto the grassy area that surrounds the crushed rock.

## J. S8G Transformer B

1. Location: This transformer is located east of building 73C in area 85. The transformer equipment pieces are oil-filled electrical equipment. The location of this transformer set is shown on the Facility Diagram with a designation of T5.
2. Contents: 10-C oil
3. Capacity: This unit consists of two items. The capacity of these items is as follows:

Main Transformer – 3830 gallons

Load Tap Changer – 150 gallons

Total capacity - 3980 gallons

4. Containment System:  
The transformer and the load tap changer are surrounded by a macadam dike, which is filled with crushed rock. In the event of oil leakage, initial quantities of the oil would be contained within the macadam dike and begin to infiltrate downward into the crushed rock void spaces and the underlying ground. A larger quantity of leaked oil may lead to a release of oil outside of the macadam dike. A larger quantity of oil loss from the transformer and/or load tap changer would likely result in failure of the equipment pieces, which would then likely result in a loss of electrical power to portions of the facility infrastructure. This loss of power would cause an almost immediate personnel response to identify the cause of the power loss, resulting in prompt identification of the emergent oil leak followed by immediate response actions by trained site personnel. In the event that oil reaches the nearest storm drain, the transformer and load tap changer are situated within storm sewer shed 4; drainage from this area is controlled on-site by a sluice gate equipped with an underflow oil baffle. These collective infrastructure features and active secondary containment measures provide sufficient secondary containment for the equipment pieces to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.
5. Direction of flow:  
If a leak were to develop from the transformer and/or the load tap changer, the oil would collect in the crushed rock area that surrounds the transformer. The oil would remain in this area until the spill is identified and cleanup actions are initiated. If the transformer and/or load tap changer were to rupture, some oil could spray onto the grassy area that surrounds the crushed rock.

5. NEWPORT NEWS SHIPYARD (NNS)

A. Derrick Crane (NYS Registered Tank #038)

1. Location: Building 26. The tank is shown on the Facility Diagram with a designation of SAST 38.
2. Contents: Diesel Fuel Oil
3. Capacity: 59 gallons
4. Installation Date: 8/98
5. Construction:
  - Aboveground Steel
  - Epoxy coated internal surface
  - Painted external surface
  - Factory built

6. Use: Supplies diesel fuel to the derrick crane. Pumping/Dispensing method is suction.
7. Containment System:  
The tank is installed within a welded steel dike. Volume calculations and analysis for the secondary containment dike are provided in Attachment 8.5. This information confirms that the welded steel dike provides sufficient secondary containment for the tank.
8. Associated Transfer Piping:  
The fuel oil transfer piping consists of flexible hoses and copper tubing. The fill piping is made of steel and is supported by metal stanchions/brackets. The fill piping is no longer used and is scheduled for removal. All the piping is located aboveground.
9. Storage Tank Filling Operations:  
Fuel oil is delivered by hand carrying 5-gallon containers to the tank for direct fueling of the tank. Tank filling operations are continuously monitored and filling would be secured to prevent a major spill from occurring should a leak develop.
10. Safety Systems:  
The tank has a digital level indication. The containment tank has a local alarm, which would notify the operator if product enters the containment. Spill control equipment is maintained on site to support the containment and cleanup of a spill.
11. Spill Potential and Direction of Flow
  - i. Spill Potential:  
A spill could occur during filling operations or from leaks in piping, equipment, or the tank.
  - ii. Direction of Flow:  
A spill from the transfer pump supply piping could be at a rate of drops/minute to gallons/minute depending on the severity of the leak. Most of this piping is located inside Building 20. A spill of fuel oil from the piping contained in Building 20 could vary in rate from drops/minute to gallons/minute depending on the severity of the leak. Most of the fuel oil would collect on the concrete floor of the area. Depending on the location of the leak and the amount of oil spilled, some oil could enter the site storm drain system through the building floor drains. The underflow baffles and loofah booms continuously maintained in the S8G Ditch would help contain any oil that enters the site storm drain system.  
  
A spill of fuel oil from the piping, which goes from the transfer pump to the storage tank, could vary in rate from drops/minute to gallons/minute depending on the severity of the leak. Most of this

piping is located inside Building 20. The outside piping is not continuously monitored. Any fuel oil that is spilled will flow onto the roadway south of Building 21 or onto the roof of Building 21. A spill may also occur when containers are hand carried to fill the crane tank. During this evolution any fuel spilled onto the stairs or roof would be quickly noticed and actions would be taken to contain and clean up the spill.

Depending on the amount of oil spilled some oil could enter the building roof drains, which flow to the site storm drain system.

A spill from the crane fuel oil piping/tubing could vary in rate from drops/minute to gallons/minute depending on the severity of the spill. These lines are normally not pressurized unless the crane is in operation. Thus normally any spill would be very small or if the crane were in operation, would be noticed by the crane operator, who would secure the crane and take action to contain and cleanup the spill. The spill would be contained in the crane housing. No fuel oil would enter the site discharge system.

A spill from the fuel oil tank would be contained in the containment tank. No fuel oil would enter the site discharge system at gate 4.

B. Ringer Crane

1. Location: Building 86A. The tank is shown on the Facility Diagram with a designation of SAST RC.
2. Contents: Diesel Fuel
3. Capacity: 560 gallons
4. Installation Date: 1973
5. Construction: Steel
6. Use: Supplies diesel fuel to the Ringer Crane. Pumping/Dispensing method is suction.
7. Containment System:  
The tank is a single-walled tank. The entire crane, inclusive of the tank, is supported by a continuous concrete ring, which extends to bedrock. The inside of this ring is filled with crushed rock. Any spilled oil would drain downward into the crushed rock and the underlying ground, within the confines of the concrete ring. The oil leakage would be promptly identified by equipment personnel and response actions would be immediately initiated. The crane is situated within storm sewer shed 4;

drainage from this area is controlled on-site by a sluice gate equipped with an underflow oil baffle. These collective infrastructure features and active secondary containment measures provide sufficient secondary containment for the lubricating oil system to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

8. Associated Transfer Piping:  
The fuel oil piping consists of rubber hoses and copper tubing. All of the piping is located aboveground.
9. Storage Tank Filling Operations:  
The tank is filled from the portable diesel fuel oil tank using portable hoses and pumps. The portable tank is filled in the boiler house delivery station that drains to the boilerhouse secondary containment structure. Overfill of the ringer crane fuel oil tank is prevented by the use of a direct audible or code signal between the tank gauger and the portable tank pump operator to continuously monitor tank level. Tank filling operations are continuously monitored and pumping would be secured to prevent a major spill from occurring should a leak develop.
10. Safety Systems:  
The tank has a level indication. Spill control equipment is maintained on site to support the containment and cleanup of a spill.
11. Spill Potential and Direction of Flow:
  - i. Spill Potential:  
A spill could occur during filling operations or from leaks in piping, equipment, or the tank.
  - ii. Direction of Flow:  
A spill during a filling evolution could be at a rate of drops/minute to gallons/minute depending on the severity of the leak. A leak from the portable tank would be contained in the portable tank metal containment. If the leak were from the transfer hose the diesel fuel oil would spill either on the macadam surrounding the crane or the crushed rock under the crane depending on the location of the leak. Since this evolution is continuously monitored, the fill evolution would be secured and actions initiated to contain and cleanup the spill if a leak occurs.

A spill from the fuel oil tank could be at a rate of drops/minute to the instantaneous release of 560 gallons, which is the capacity of the tank. The fuel oil would normally fall into and be contained in the crushed rock underneath the crane, until spill cleanup could be initiated. During winter months this area could be frozen and could be filled with snow. Under these conditions, some fuel oil could enter the site storm drain system at gate 4.

## C. (Deleted)

## D. 264 Gallon Portable Diesel Fuel Tank

1. Location: Outside of Building 73C. The location where the tank is normally stored when not in active use (i.e., refueling site equipment) is shown on the Facility Diagram with a designation of PAST 2.
2. Contents: Diesel Fuel Oil
3. Capacity: 264 gallons
4. Installation Date: 2012
5. Construction: Steel
6. Use: Supply diesel fuel to Site equipment. Pumping/dispensing method is suction.
7. Containment System:  
The tank is situated wholly within a welded steel dike with a closable lockable steel top. The manufacturer states that the outer tank is large enough to hold all the oil should the inner fuel tank break, crack, or leak (110% capacity in the interstice). Accordingly, the welded steel dike provides sufficient secondary containment for the tank.
8. Associated Transfer Piping:  
A flexible hose is used to refuel site vehicles from the diesel pump. The system piping and fill hose are contained within its metal secondary containment.
9. Filling Operations:  
The tank is filled from the Site 4,000-gallon diesel fuel oil tank. The tank is filled inside the 4,000-gallon diesel fuel oil storage tank delivery station, which drains to the boilerhouse secondary containment structure. Tank overfill is prevented by the person filling the tank directly monitoring tank level and securing filling of the tank when it reaches full capacity.
10. Safety Systems:  
The tank has a level indicator. Any indications of a leak or loss of inventory would lead to corrective action. Tank overfill is prevented by the person filling the tank directly monitoring tank level and securing filling of the tank when it reaches full capacity.

## E. Lucker Test Machine (Hydraulic Oil System)

The Lucker Test Machine is a stationary closed-loop oil-filled operating equipment piece installed in Building 107. More specifically, the unit is a

hydraulically operated machine that is used to load test rigging equipment and contains approximately 75 gallons of a mineral-based hydraulic oil in a reservoir located in the control console of the machine. The equipment piece is shown on the Facility Diagram with a designation of SOE 5.

A retrofit secondary containment structure was installed around the oil reservoir in 2000. The secondary containment structure is an open-top dike structure, installed around the reservoir such that the reservoir is wholly encompassed by the horizontal extent of the underlying dike. The dike construction is a wood frame with an inside lining of herculite. A metal plate is placed on the inside base of the structure for direct support of the oil reservoir. Design documents and calculations on-file indicate that the design capacity of the secondary containment structure is approximately 101 gallons.

The equipment piece is a somewhat linear machine installed in the far southwest corner of the Building 107 High Bay, with the south end of the machine situated approximately 10 feet from an adjacent roll-up garage door. Several hydraulic lines extend the full length of the machine, extending from and outside of the oil reservoir and its secondary containment structure. The machine is continuously attended by site personnel when in active operation.

Visual inspection indicates that the building floor in this area is flat (i.e., no apparent pitch). Outside of the garage door, a stormwater catch basin is located approximately 25 feet downgradient of the door opening.

A spill kit and storm drain cover is to be staged in the southwest corner of the High Bay, in the immediate area of the equipment piece. In the event of an oil leak from the hydraulic system occurring outside of the reservoir containment, the attending personnel will be able to immediately identify the oil leak and respond accordingly, using the dedicated spill response equipment. The spill response equipment can be used to prevent oil from reaching the near downgradient storm drain.

These collective infrastructure features and active secondary containment measures provide sufficient secondary containment for the oil-filled operating equipment piece to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

F. IR #5107 Air Compressor (CA-16; Portable Diesel Fuel Tank)

This equipment piece consists of a trailer-mounted air compressor system fueled by two on-board auxiliary diesel fuel tanks (i.e., the equipment piece includes two portable diesel fuel tanks). The two diesel fuel tanks are identical painted steel tanks each with a capacity of 115 gallons. The tanks are equipped with a level indicator with a direct read-out gauge installed within the unit's control panel.

The diesel fuel tanks are situated atop and partially within a trailer-wide welded-steel undercarriage type containment frame that is sized to contain at least 110%

of the unit's aggregate operating fluid volume (per manufacturer's information). The overall air compressor unit and auxiliary diesel fuel tanks are situated within a steel cabinet enclosure; the enclosure is maintained fully closed except when as-needed personnel access is periodically required. Closure of the cabinet provides for complete containment of the diesel fuel tanks by the fluid containment frame, in the event of oil leakage or tank rupture. In the event the cabinet is open, personnel are by nature in continuous attendance, such that a diesel fuel spill or tank rupture would be immediately observed and responded to.

These collective infrastructure features and active secondary containment measures provide sufficient secondary containment for the two portable tanks to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

The site location where the equipment piece is generally staged when not in active site use is shown on the facility diagram with a designation of Mobile Aboveground Storage Tank (MAST) 1.

G. IR #4817 Air Compressor (CA-14; Portable Diesel Fuel Tank)

This equipment piece consists of a trailer-mounted air compressor system fueled by two on-board auxiliary diesel fuel tanks (i.e., the equipment piece includes two portable diesel fuel tanks). The two diesel fuel tanks are identical painted steel tanks each with a capacity of 115 gallons. The tanks are equipped with a level indicator with a direct read-out gauge installed within the unit's control panel. The diesel fuel tanks are situated atop and partially within a trailer-wide welded-steel undercarriage type containment frame that is sized to contain at least 110% of the unit's aggregate operating fluid volume (per manufacturer's information). The overall air compressor unit and auxiliary diesel fuel tanks are situated within a steel cabinet enclosure; the enclosure is maintained fully closed except when as-needed personnel access is periodically required. Closure of the cabinet provides for complete containment of the diesel fuel tanks by the fluid containment frame, in the event of oil leakage or tank rupture. In the event the cabinet is open, personnel are by nature in continuous attendance, such that a diesel fuel spill or tank rupture would be immediately observed and responded to.

These collective infrastructure features and active secondary containment measures provide sufficient secondary containment for the two portable tanks to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

The site location where the equipment piece is generally staged when not in active site use is shown on the facility diagram with a designation of Mobile Aboveground Storage Tank (MAST) 2.

#### H. IR #CA-15 Air Compressor (Portable Diesel Fuel Tank)

This equipment piece consists of a trailer-mounted air compressor system fueled by an on-board auxiliary diesel fuel tank. The diesel fuel tank is a plastic tank with a capacity of 58 gallons (i.e., the equipment piece includes an on-board portable diesel fuel tank). The tank is equipped with a level indicator with a direct read-out gauge installed within the unit's control panel.

The diesel fuel tank is situated atop and partially within a welded-steel undercarriage type containment frame that is sized to contain at least 110% of the unit's aggregate operating fluid volume (per manufacturer's information). The overall air compressor unit and auxiliary diesel fuel tank is situated within a steel cabinet enclosure; the enclosure is maintained fully closed except when as-needed personnel access is periodically required. Closure of the cabinet provides for complete containment of the diesel fuel tank by the fluid containment frame, in the event of oil leakage or tank rupture. In the event the cabinet is open, personnel are by nature in continuous attendance, such that a diesel fuel spill or tank rupture would be immediately observed and responded to.

These collective infrastructure features and active secondary containment measures provide sufficient secondary containment for this oil-filled operating equipment piece to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

The site location where the equipment piece is generally staged when not in active site use is shown on the facility diagram with a designation of Mobile Aboveground Storage Tank (MAST) 3.

#### I. Building 73C Oil Drum Storage

Building 73C is used to store 55-gallon drums of new oil, used oil, and oily water. The location of this oil drum storage area is shown on the Facility Diagram with a designation of Drum Storage Area (DSA) 7. The design capacity of this oil drum storage area is 14 55-gallon drums.

All oil drums are stored on designed secondary containment structures sized to contain at least the capacity of the single largest drum stored on the structure. The oil drums are stored in an upright position with the bungs tightly closed except when oil is being added to or removed from the drums.

Any leakage from the oil drum would be contained within the underlying secondary containment structure and pumped to appropriate containers.

Spills from these drums would most likely occur during transport of the containers from Building 73C or when oil is being added to the container. During both of these evolutions personnel are present who would identify and initiate corrective actions for the spill. Depending where on the facility the spill occurs, some oil could enter the site storm drain system. As described in Section 1.5

above, drainage from the site areas encompassed by storm sewer sheds 3, 4, 5, and 10 is controlled by sluice gates equipped with underflow oil baffles. The underflow oil baffles serve to contain any incidental floating oil upstream of the sluice gate discharge, retaining the oil to allow for its manual collection and removal from the drainage system.

## 6. MAINTENANCE OPERATIONS

### A. 320 kW Mobile Emergency Diesel Generator (3406B)

This equipment piece is a trailer-mounted mobile electrical generator which includes an on-board auxiliary diesel fuel tank. The diesel fuel tank is of painted steel construction and has a design capacity of 200 gallons. The tank is equipped with a level indicator with a direct read-out gauge installed within the unit's control panel.

The site location where the equipment piece is generally staged when not in active site use is shown on the facility diagram with a designation of Mobile Aboveground Storage Tank (MAST) 4. This staging area is situated within the storm sewer shed for sluice gate 10; sluice gate 10 is equipped with an underflow oil baffle. The underflow oil baffle will serve to contain any incidental floating oil upstream of the sluice gate discharge, retaining the oil to allow for its manual collection and removal from the drainage system.

In the event that the equipment piece is positioned for use within a storm sewer shed that is not serviced by a sluice gate equipped with an underflow oil baffle, the equipment piece will be maintained within a portable secondary containment of sufficient capacity to contain the diesel fuel tank capacity plus sufficient freeboard for precipitation. Specifically, the secondary containment is to provide sufficient freeboard volume to contain the 25-year, 24-hour storm event (4.39 inches).

In the event that stormwater accumulates within the portable secondary containment, the stormwater must be removed at a rate sufficient to maintain the required precipitation freeboard volume. The surface of the accumulated stormwater is to be visually inspected for an oil sheen prior to discharge. Should the accumulated stormwater have an oil sheen, the containments will be removed using an appropriate absorbent material. Discharges will only commence upon approval from a trained, authorized staff member that water is free of visible oil sheen and weather conditions are suitable (or required) for discharge. The date, time, and names of personnel supervising each discharge event from this secondary containment structure are to be documented.

These collective infrastructure features and active secondary containment measures, as detailed above, provide sufficient secondary containment for the mobile equipment piece to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

**B. Building 5 Drum Storage**

Building 5 is used to store 55-gallon drums of new oil, used oil, and oily water. The location of this oil drum storage area is shown on the Facility Diagram with a designation of Drum Storage Area (DSA) 11. The design capacity of this oil drum storage area is six 55-gallon drums.

All oil drums are stored on designed secondary containment structures sized to contain at least the capacity of the single largest drum stored on the structure. The oil drums are stored in an upright position with the bungs tightly closed except when oil is being added to or removed from the drums.

Any leakage from the oil drum would be contained within the underlying secondary containment structure and pumped to appropriate containers.

Spills from these drums would most likely occur during transport of the containers from Building 5 or when oil is being added to the container. During both of these evolutions personnel are present who would identify and initiate corrective actions for the spill. Depending where on the facility the spill occurs, some oil could enter the site storm drain system. As described in Section 1.5 above, drainage from the site areas encompassed by storm sewer sheds 3, 4, 5, and 10 is controlled by sluice gates equipped with underflow oil baffles. The underflow oil baffles serve to contain any incidental floating oil upstream of the sluice gate discharge, retaining the oil to allow for its manual collection and removal from the drainage system.

**C. 320 kW Mobile Emergency Diesel Generator (E00219T)**

This equipment piece is a trailer-mounted mobile electrical generator which includes an on-board UL 142 certified dual wall diesel fuel tank. The diesel fuel tank is of painted steel construction and has a design capacity of 400 gallons. The tank is equipped with an electric fuel level gauge with a direct read-out gauge installed within the unit's control panel. The dual wall construction provides the requisite secondary containment for the tank.

The site location where the equipment piece is generally staged when not in active site use is shown on the facility diagram with a designation of Mobile Aboveground Storage Tank (MAST) 5.

**D. Vertical Proofrest (Load Test) Machine (Hydraulic Oil System)**

The Vertical Proofrest (Load Test) Machine is a stationary closed-loop oil-filled operating equipment piece installed in Building 6C. More specifically, the unit is a hydraulically operated machine that is used to load test rigging equipment and contains approximately 80 gallons of a mineral-based hydraulic oil in a reservoir located in the control console of the machine. Several hydraulic lines extend the full length of the machine, extending from and outside of the oil reservoir. The

machine is continuously attended by site personnel when in active operation. The equipment piece is shown on the Facility Diagram with a designation of SOE 6.

Visual inspection of Building 6C indicates that the building floor is flat (i.e., no apparent pitch) with no floor drains. The floor perimeter is curbed and the two garage door openings are raised above the finish floor elevation. The building infrastructure, as described, provides sufficient secondary containment for the mobile equipment piece to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

## 7. REGULATED MATERIALS

### A. Building 75 Portable Container Storage Area

Building 75 is used to store portable containers of various types and capacities, ranging from 55-gallon drums to totes having capacities of up to 500 gallons. Oil storage in this area includes used oil, oily water, and new oil. The location of this portable container storage area is shown on the Facility Diagram with a designation of Drum Storage Area (DSA) 5. The design capacity of this portable container storage area is 200 individual containers or 11,000 gallons aggregate.

All oil portable containers are stored on designed secondary containment structures sized to contain at least the capacity of the single largest container stored on the structure. The oil containers are stored in an upright position with the bungs tightly closed except when oil is being added to or removed from the containers. Any leakage from a portable oil container would be contained within the underlying secondary containment structure and pumped to appropriate containers.

Spills from these containers would most likely occur during transport of the containers to Building 75. During this activity personnel are present who would identify and initiate corrective actions for the spill. Depending where on the facility the spill occurs, some oil could enter the site storm drain system. As described in Section 1.5 above, drainage from the site areas encompassed by storm sewer sheds 3, 4, 5, and 10 is controlled by sluice gates equipped with underflow oil baffles. The underflow oil baffles serve to contain any incidental floating oil upstream of the sluice gate discharge, retaining the oil to allow for its manual collection and removal from the drainage system.

In general, the portable containers stored in Building 75 are ultimately transported offsite for offsite management. This transport is accomplished in one of two ways: 1) direct load-out of the individual loaded containers into commercial over-the-road trucks (i.e., box-van type trucks or tractor/trailers); or 2) bulk transport via a commercial over-the-road cargo tank truck. The latter transfer is accommodated within the building's covered truck bay, situated within the northern portion of the building. The truck bay floor includes an embedded perimeter grated floor drain system that drains to a dead-end collection sump; the

two garage door openings are bermed to prevent run-on/runoff. The floor drain system provides a secondary containment volume of approximately 5,700 gallons.

For outboard transport of used oil using a commercial cargo tank truck, a vacuum pump is used to transfer the used oil from the portable containers into the truck's cargo tank. Throughout the entire active cargo tank truck loading event, the full extent of the cargo tank is parked wholly within the bermed truck bay. Overfill of the cargo tank is prevented by verifying that the used oil volume being transferred to the cargo tank is less than the available cargo tank capacity.

The location of the Building 75 Truck Bay is shown on the Facility Diagram with a designation of Tank Truck Loading/Unloading Area F.

**B. Building 3C West Portable Oil Container Storage Area**

Building 3C West is used to store portable oil containers of various types and capacities, up to 55-gallons. Oil storage in this facility includes used oil, oily water, and new oil. The location of this portable container storage area is shown on the Facility Diagram with a designation of Drum Storage Area (DSA) 4. The design capacity of this portable container storage area is 100 individual containers or 5,500 gallons aggregate.

The building is provided with a retrofitted base composite liquid secondary containment system. The retrofitted secondary containment system is detailed in the project's technical specifications. In summary, offset from the perimeter floor edge along the north, northwest, south and southwest perimeters, a continuous concrete control joint occurs between the original concrete floor and the existing concrete building foundation. Stainless steel sheet metal was placed to span this concrete control joint, and the sheet metal was secured to the floor with adhesive and steel bolts. All joints associated with this sheet metal placement were welded with water-tight welds to provide a physical liquid-tight seal. Horizontal secondary containment was then provided by placement of continuous welded steel angle iron with dimensions of 6" (vertical height) x 3.5" (base width fastened to floor) x 5/16" (iron thickness) around the four floors sides, offset somewhat from the outer perimeter floor edge. The angle iron corners were mitered and sealed with water-tight welds. The angle iron was fastened to the underlying floor with steel bolts on 24" centers and a continuous bead of water-tight sealant was provided on the underside of the angle iron prior to fastening.

By inspection, the composite retrofitted secondary containment system provides sufficient volume capacity to contain at least 100% of the volume of the single largest oil container in storage (i.e., 55 gallons). The composite retrofitted secondary containment system, as summarized above, provides sufficient secondary containment for the storage of 55-gallon oil drums to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

The oil containers are stored in an upright position with the bungs tightly closed except when oil is being added to or removed from the containers. Any leakage from a portable oil container would be contained within the confines of the retrofitted composite secondary containment system and pumped to appropriate containers.

Any potential spills from these containers would more likely occur during transport of the containers to Building 3C West. During this activity personnel would be present and trained on identifying and initiating corrective actions for the spill. Depending where on the facility the spill occurs, some oil could enter the site storm drain system. As described in Section 1.5 above, drainage from the site areas encompassed by storm sewer sheds 3, 4, 5, and 10 is controlled by sluice gates equipped with underflow oil baffles. The underflow oil baffles serve to contain any incidental floating oil upstream of the sluice gate discharge, retaining the oil to allow for its manual collection and removal from the drainage system.

In general, the portable containers stored in Building 3C West are ultimately transported offsite for management. This transport is accomplished in one of two ways: 1) direct load-out of the individual loaded containers into commercial over-the-road trucks (i.e., box-van type trucks or tractor/trailers); or 2) bulk transport via a commercial transportation cargo tank truck.

For bulk offsite transport of the portable container contents via a commercial cargo tank truck, the outbound containers will be moved to the Building 75 portable container storage area and/or the adjacent Building 75 truck bay. The cargo tank truck will be situated within the truck bay. Load-out procedures identical to those detailed above for the Building 75 portable container storage area tank truck loading above will be utilized to complete the load-out activity from this location.

The location of the Building 75 Truck Bay is shown on the Facility Diagram with a designation of Tank Truck Loading/Unloading Area F.

## 8. MATERIALS MANAGEMENT

### A. Building 83 Drum Storage

Building 83 is used to store 55-gallon drums of new oil. The location of this oil drum storage area is shown on the Facility Diagram with a designation of Drum Storage Area (DSA) 6. The design capacity of this oil drum storage area is 28 55-gallon drums.

All oil drums are stored on designed secondary containment structures sized to contain at least the capacity of the single largest drum stored on the structure. The oil drums are stored in an upright position with the bungs tightly closed except when oil is being added to or removed from the drums.

Any leakage from the oil drum would be contained within the underlying secondary containment structure and pumped to appropriate containers.

Spills from these drums would most likely occur during transport of the containers to or from Building 83 or when oil is being added to the container. During each of these evolutions, personnel are present who would identify and initiate corrective actions for the spill. Depending where on the facility the spill occurs, some oil could enter the site storm drain system. As described in Section 1.5 above, drainage from the site areas encompassed by storm sewer sheds 3, 4, 5 and 10 is controlled by sluice gates equipped with underflow oil baffles. The underflow oil baffles serve to contain any incidental floating oil upstream of the sluice gate discharge, retaining the oil to allow for its manual collection and removal from the drainage system.

## 9. RADIOLOGICAL CONTROLS

### A. 100 kW Mobile Emergency Diesel Generator

This equipment piece is a trailer-mounted mobile electrical generator which includes an on-board auxiliary diesel fuel tank. The diesel fuel tank is of painted steel construction and has a design capacity of 160 gallons. The equipment piece includes an fluid containment reservoir that provides secondary containment for the entire contents of the diesel fuel tank. The tank is provided with an electric fuel level gauge with a direct read-out gauge installed within the unit's control panel.

The site location where the equipment piece is generally staged when not in active site use is shown on the facility diagram with a designation of Mobile Aboveground Storage Tank (MAST) 6.

## 10. FACILITIES ENGINEERING AND PLANNING

### A. Building 112 Elevator

The Building 112 elevator is an oil-filled operating equipment system that uses hydraulic oil for operation of the elevator. The elevator hydraulic system is a closed-looped system having a design capacity of 110 gallons. The location of the elevator is shown on the Facility Diagram with a designation of Elevator (ELE) 112.

The elevator system and associated elevator shaft is situated within interior structural enclosures that do not include any floor drains. By inspection, oil leakage from the hydraulic oil reservoir and associated piping systems would be completely contained within the building enclosure. Accordingly, the building enclosure provides sufficient secondary containment for the elevator to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.

The following actions are taken at the Kesselring Site to ensure that the potential for oil spills during oil transfers/deliveries is minimized:

1. VEHICULAR TRAFFIC

All aboveground oil transfer piping is located in areas where vehicular traffic is not routinely permitted. Concrete stanchions, steel bollards, curbing, and fencing are used to protect tanks and piping that are close to traffic. Also, all inbound commercial tank trucks are provided with an on-site escort. One of the purposes of this escort is to ensure that the truck driver is made aware of all pipes and equipment which could be damaged by the vendor's truck while in transit on-site. Prior to departure from the tank truck loading/unloading area, the tank truck's lower most drain and all outlets are inspected to confirm closure to prevent oil discharges while in transit on-site.

2. OIL PIPE SUPPORTS

Pipe supports are normally made of metal and are properly designed to minimize abrasion and corrosion and to allow for expansion and contraction.

3. BURIED OIL PIPES

The facility's SPCC jurisdictional oil inventory does not include any buried oil piping.

4. OUT OF SERVICE OIL PIPING AND CONNECTIONS

All out of service oil piping has been either removed or has been flushed and the connections have been plugged or capped. All oil fill connections are plugged or blank flanged when the connection is not in use.

5. ABOVEGROUND OIL PIPELINES AND VALVES

All new oil piping and oil piping system components are tested at system operating pressure following installation. Some systems are pressure tested at 1-1/2 times the operating pressure. All existing aboveground valves and pipelines associated with bulk storage containers are inspected at least monthly. Some systems are inspected more frequently. The organization responsible for each storage system performs the inspections and maintains a copy of the inspection records.

6. TRANSFER OPERATIONS

Transfer operations for each specific bulk storage tank are discussed in Section 2.0, above, and minimum requirements for all tank truck loading and unloading activities are discussed in Section 3.7, below. In all non-automated systems or, in the event of a level indicator being inoperable, filling operations are continuously monitored.

**7. CARGO TANK TRUCK UNLOADING AND LOADING**

All commercial cargo tank truck loading and unloading events occurring at the facility must be in complete conformance with the following minimum requirements.

**A. United States Department of Transportation (USDOT) Jurisdiction and Requirements**

Loading and unloading of a commercial over-the-road oil cargo tank truck at the facility is under the direct jurisdiction of the USDOT via regulation (49 CFR Part 177, Subpart B: Loading and Unloading). Under these regulations, in part, the following circumstances and requirements apply.

1. The cargo tank must be attended by a USDOT qualified person at all times when it is being loaded. The person who is responsible for loading the cargo tank is also responsible for ensuring that it is so attended.
2. The cargo tank must be attended by a qualified person at all times during unloading. However, the carrier's obligation to ensure attendance during unloading ceases (where applicable) when:
  - The carrier's obligation for transporting the oil is fulfilled;
  - The cargo tank has been placed upon the site premises; and
  - The motive power has been removed from the cargo tank and removed from the premises.
3. A qualified person "attends" the loading or unloading of a cargo tank truck if, throughout the process, he/she is alert and is within 25 feet of the cargo tank. The qualified person attending the unloading of a cargo tank must have an unobstructed view of the cargo tank and the delivery hose to the maximum extent practicable during the unloading operation.
4. A person is "qualified" if he/she has been made aware of the nature of the hazardous material which is being loaded or unloaded, he/she has been instructed on the procedures to be followed in emergencies, he/she is authorized to move the cargo tank, and he/she has the means to do so.
5. A person may not drive a cargo tank motor vehicle containing oil regardless of quantity unless:
  - All manhole closures are closed and secured; and
  - All valves and other closures in liquid discharge systems are closed and free of leaks.

For the site's commercial oil cargo tank truck unloading and loading events, the carrier driver is the USDOT "qualified" person. Facility personnel do not have

this qualification or its attendant regulatory responsibilities. Facility personnel are not qualified to drive the carrier's cargo tank truck.

B. Secondary Containment Requirements for Cargo Tank Unloading

Throughout the entire cargo tank truck unloading event, the full extent of the cargo tank must be parked wholly within a secondary containment structure which is designed to contain at least the largest total actual verified quantity of oil contained within any compartment of the unloading cargo tank truck.

Verification of the actual quantity of oil contained within any compartment is to be confirmed and documented through review of the carrier's bill of lading or other USDOT-required shipping/transport document as provided by the carrier.

C. Preliminary Measures and Procedures

1. To the maximum extent practicable, scheduling of the active cargo tank unloading and loading event during active precipitation conditions should be avoided.
2. To the maximum extent practicable, the event should be pre-scheduled to ensure facility readiness and to allow for appropriate site notifications prior to the event.
3. The tank truck unloading and loading event is to occur only in prior designated tank truck unloading and loading areas (Section 2.0, above).
4. All stormwater catch basins and/or storm drain inlets located downgradient from the designated tank truck unloading area and that have the potential to receive oil discharges resulting from the evolution must be covered using industry-standard covers to prevent oil discharge to the storm drain system.
5. The tank truck's manual brake must be set throughout the duration of the active evolution.
6. At least one set of wheels on the cargo tank must be chocked front and back to prevent motion of the cargo tank during the active evolution. This action also separately provides compliance with §112.7(h)(2): *Provide an interlocked warning light or physical barrier system, warning lights, wheel chocks or vehicle break interlock system in loading/unloading areas to prevent vehicles from departing before complete disconnection of flexible or fixed oil transfer lines.*
7. As necessary based on the type of equipment and lines/hoses utilized for the oil transfer, either metallic bonds or ground connections are to be provided for the neutralization of possible static charges prior to and during the oil transfer.

8. A facility employee must ensure that drip pans or buckets or oil absorbent pads are placed beneath all hose connections that may be prone to leakage, prior to commencement of the active oil transfer.
9. The actual oil delivered must be compared against the receiving tank's oil type to ensure the tank is to be loaded with the appropriate oil type.
10. The oil transfer may not commence until the existing level in the receiving tank has been checked and verified to ensure that the receiving tank has sufficient available volume, based on the working capacity of the receiving tank (90% of the design capacity) to receive the intended oil transfer volume.
11. Unless the cargo tank truck engine is to be used for operation of the transfer pump, the tank truck engine must not be running if flammable oil is to be transferred.

D. Procedures for the Active Tank Truck Unloading Evolution

1. No smoking is allowed throughout the active duration of the evolution. Open flames are to be kept away from the active oil transfer area at all times.
2. The active oil transfer evolution is to be continuously and directly attended by the truck driver (i.e., the USDOT qualified person) and at least one facility person. These individuals are to take immediate actions to stop the flow of oil when the working capacity of the receiving tank has been reached (90% of the tank's design capacity) regardless of the intended transfer volume, or in the event of equipment failure or an emergency circumstance occurs.
3. The receiving tank system must be equipped with a gauge that accurately shows the level of oil in the tank. The gauge must be installed such that it can be conveniently read and it must be accessible to the carrier driver at all times. If this equipment is not available, alternate devices or means must be provided to ensure that the rising oil level in the receiving tank is readily and continuously available to the carrier driver at all times throughout the active oil transfer.
4. Throughout the active transfer process, the truck driver and facility employee are to remain alert and maintain an unobstructed view of the cargo tank truck, the delivery hoses and lines and the receiving tank, to the maximum extent practicable.
5. In the event of a release of oil outside of designed containment structures, the oil transfer is to be immediately stopped and the facility's prescribed spill response procedures are to be immediately initiated.

6. Upon completion, prior to disconnection of the transfer line, the drain/transfer valve on the cargo tank truck is to be closed and the transfer line fully drained back to the tank truck or receiving tank, or blown empty (as appropriate). This does not apply to nozzle-fill transfer hoses that are designed to remain full.
7. Prior to release of the cargo tank truck, the lowermost drain and all outlets of the cargo tank are to be inspected for the potential for oil leakage. If necessary, such drains and outlets are to be tightened, adjusted or replaced prior to release of the tank truck from the secondary containment structure.
8. The wheel chocks and any storm drain covers are to be removed once all of the above steps have been completed.

## 1. PERIODIC VISUAL INSPECTIONS

Each individual component of the facility's SPCC-jurisdictional oil inventory is subject to a periodic visual inspection by the responsible owner. The primary purpose of the visual inspection is to identify potential conditions or circumstances that could result in an oil discharge. For all inspections, if a deficiency is identified during the inspection, remedial measures are promptly taken to eliminate the deficiency, including prompt cleanup of any spills. The type and frequency of these inspections are detailed below.

Aboveground tanks, piping and transformers are also periodically visually checked by Incident Prevention personnel. The Kesselring Site has a full time, dedicated Incident Prevention (IP) organization with a minimum of three persons available on a 24/7 basis.

The IP organization periodically inspects the facility for indications of fires, spills, or malfunctioning equipment.

In general, if any inspections of the facility's SPCC-jurisdictional oil inventory identify structural damage or deformation, weld changes/deterioration, or increased rusting or peeling paint, an additional inspection will be performed by knowledgeable non-destructive testing professionals. Additional testing may be recommended after the inspection as deemed appropriate. Surfaces that show increased rusting or peeling of paint will be cleaned, inspected, remaining wall thickness measured, analyzed, and repainted as soon as possible at the direction of the cognizant engineer. Weekly inspections will be conducted until the container has been repainted or otherwise fully restored. Should the visual inspection or follow-up testing indicate tank failure is possible, the contents will be transferred as soon as practicable to a suitable container and the tank will be repaired or replaced.

### A. SPCC Jurisdictional Oil-Filled Transformers

All SPCC jurisdictional oil-filled transformers (Section 2.0, above) are visually inspected at a minimum annual frequency by the responsible Organization. A one-page form entitled *OIL FILLED TRANSFORMER INSPECTION* that is to be used for this visual inspection is provided in Attachment 8.6. In part, the completed form is to be signed by the performing inspector.

### B. Oil-Filled Hydraulic Elevators

The facility's SPCC jurisdictional oil-filled hydraulic elevators (Section 2.0, above) are visually inspected at a minimum monthly frequency by a qualified commercial elevator service contractor, utilizing the contractor's elevator inspection form. By its nature, the hydraulic oil system is a fundamental and critical component of operation of the elevator; accordingly, the commercial contractor's monthly visual inspection critically focuses on verifying the status, condition, and integrity of the hydraulic oil system, including identification of deficiencies or current or pending maintenance requirements.

A designated facility person is assigned to continuously accompany and oversee the commercial inspector for these inspections. This designated person maintains all original inspection forms completed and signed by the commercial inspector. The attending facility person is a designated SPCC oil-handling person and is subject to the facility's SPCC training requirements for all oil-handling personnel. This regulatory training by the designated facility person allows for prompt recognition and appropriate follow-up and response for any regulatory issues or concerns identified by the monthly contractor inspections.

In reliance on the monthly visual inspections completed for the elevators, as summarized above, no further or separate visual inspection is required for the SPCC jurisdictional elevators.

C. NYSDEC Registered Aboveground Bulk Storage Facilities (Stationary Tanks)

All of the facility's NYSDEC Registered stationary aboveground bulk storage tanks (Section 2.0, above) are visually inspected on a monthly basis, in accordance with the requirements of 6 NYCRR 613.6.

The monthly inspection of these tanks includes the following:

- i. Inspecting exterior surfaces of tanks, pipes, valves, and other equipment for leaks and maintenance deficiencies.
- ii. Identifying cracks, areas of wear, corrosion and thinning, poor maintenance and operating practices, excessive settlement of structures, separation or swelling of tank insulation, malfunctioning equipment, structural and foundation weaknesses.
- iii. Inspecting and monitoring all leak detection systems, cathodic protection monitoring equipment, or other monitoring or warning systems which may be in place at the facility.

Inspection forms used for this inspection are provided in Attachment 8-6.

D. Building 75 Oil Drums

Building 75 is a NYSDEC-permitted waste storage area. The NYSDEC permit for this building requires completion of documented weekly visual inspection of all containers stored in the building. This weekly visual inspection specifically evaluates the physical integrity of all individual oil drums and their respective secondary containment.

In reliance on the weekly visual inspections completed for the Building 75 oil drums, as summarized above, no further or separate visual inspection is required for these containers.

E. Remaining SPCC Jurisdictional Oil Inventory

All remaining components of the facility's SPCC jurisdictional oil inventory not encompassed by the above subsections are visually inspected at a minimum monthly frequency. Inspection forms used for these inspections are provided in Attachment 8-6.

2. RECORDS

A Certification of Applicability of the Substantial Harm Criteria form has been completed as required by Reference A. This form is attached as Attachment 8.1.

The NYSDEC petroleum bulk storage certificate is posted in Building 1. It is renewed every five years or upon significant modification. The current certificate is included as Attachment 8.2.

Preventive maintenance records are maintained by the responsible organization of the Kesselring Site. Visual inspection records are maintained by the ESH office of the Kesselring Site. The following table lists documentation and record sources related to this plan.

<u>Document or Record</u>	<u>Custodian</u>	<u>Maintained for</u>	<u>Reference</u>
Reportable Spills	KSO ESH	5 years	None
Aboveground Tank / Transformer/Drum Inspections	KSO ESH	10 years	KAPL-A-EP-1, A.4 6 NYCRR 613.6

3. INTEGRITY TESTING REQUIREMENTS FOR BULK STORAGE TANKS

A. Aboveground Field Erected Containers:

The two containers in this category are the 30,000 and 60,000 gallon heating oil storage tanks. The bottoms of these tanks are not accessible from outside the tank.

These tanks are given a formal external visual inspection by an American Petroleum Institute (API) or Steel Tank Institute (STI) certified inspector at least once every 5 years. In addition, integrity testing is done every 10 years in accordance with 6 NYCRR 613.6(b) or sooner as determined by the rate of any shell or bottom thinning. This testing consists of draining, cleaning, inspecting, and measuring the tank bottom and shell thickness. A thorough evaluation of the tank bottom is performed.

B. NNS 264 Gallon Portable Diesel Fuel Tank

This tank is designed and operated as double-walled Intermediate Bulk Container (IBC) under applicable USDOT design standards. Per USDOT testing standards, this container will be inspected every 60 months at a government registered facility, in accordance with the 49 CFR Parts 178 and 180. These USDOT inspection requirements provide appropriate periodic assessment of fitness for service for this tank.

C. Remaining Bulk Storage Containers

All other bulk storage containers included in the SPCC Plan will be periodically inspected in accordance with the most current version of STI SP001 – Standard for the Inspection of Aboveground Storage Tanks.

The Kesselring Site security system includes continuous 24-hour security guard presence and routine patrol and physical site access restrictions. Security personnel are permanently stationed in the guardhouse at the main access road that extends on-site from Atomic Power Road, to control access to the Kesselring Site. In this manner, the main access road security gate provides routine controlled access to the developed portion of the site for all inbound vehicles and for all inbound facility and non-facility personnel.

Past the main access gate, the majority of the developed portions of the Site is enclosed with a continuous chain link fence to prevent unauthorized access to the active portions of the facility. The fence system includes several integral chain link gates for emergency site ingress and egress; these gates remain secured when not in use and are unlocked only for case by case attended use. A permanently-manned guardhouse connects with the perimeter fence system and provides for all routine pedestrian access to the majority of the developed portions of the facility. The perimeter fence system for the majority of the developed portions of the Site, including the perimeter fence gates and the guardhouse, is depicted on the Facility Diagram.

All vehicles that enter the Kesselring Site through the main access road security gate undergo a rigorous security inspection at the main access gate by security personnel. During the course of this inbound vehicle security inspection, the security personnel are alert to any observed safety or environmental concern. This includes, for example, observed leakage of any fluids (fuel oil, brake fluid, transmission fluid, anti-freeze) and indications that the vehicle may not be road-worthy (flat/bald tires, shifted or unstable load, etc.). In the event that a potential environmental or safety concern is observed, the vehicle is held at the entrance gate and IP is immediately contacted for further evaluation and response.

With three exceptions (below), all of the facility's SPCC jurisdictional oil inventory is located within the secured (fenced), primary developed portion of the site. The continuous perimeter security system for the majority of the developed portions of the site, as described above, prevents unauthorized access to the facility's oil inventory by non-facility personnel.

One SPCC jurisdictional oil-filled transformer (T8) and one mobile aboveground storage tank (MAST 6) are located outside the perimeter security fence, but inside of the main access road gate, as shown on the Facility Diagram. The site's overall 24/7 security system and measures, as summarized above, provide secure and controlled access to these two equipment pieces.

One mobile aboveground storage tank (MAST 4) is staged at Pumphouse 8, outside of the perimeter security fence and outside of the main access gate. This equipment piece is staged within a fenced and locked enclosure, which provides secure and controlled access to it.

In summary, as detailed above, the facility's site security system provides secure and controlled access to all of the facility's oil handling, processing and storage areas.

Facility lighting is provided throughout the developed portions of the facility, including at all aboveground storage tank locations. In addition, personnel are provided with flashlights to support facility inspections. Thus, adequate lighting is available to discover spills and to prevent acts of vandalism.

With the exception of the oil lubrication systems associated with the MARF and S8G Facilities, all storage tank drain valves are maintained in a locked closed position. In addition, with the exceptions of the oil lubricating associated with the MARF and S8G Facilities, the starter controls on all oil pumps are locked in the "off" position, and are only accessible to authorized personnel when in non-operating or non-standby status. The MARF and S8G Facilities are secured facilities that are continuously manned which would prevent unauthorized operation of these systems. The fill nozzles for the site gasoline tank and diesel fuel oil storage tank are maintained locked in an upright position to prevent unauthorized use. All transformer drain valves are maintained in a locked, closed position. Finally, all fill connections are maintained, plugged or blank-flanged when not in service.

All delivery tank trucks are escorted and provided with verbal warnings to provide protection of piping and equipment.

## 1. SPILL CONTROL PROCEDURES

The Kesselring Site has committed the required manpower, equipment and materials necessary to expeditiously control and remove any harmful quantity of oil spilled at the Kesselring Site.

Spill control procedures have been developed for the Kesselring Site based on available resources and operational experience. The Kesselring Site maintains its own Emergency Control Center. The personnel who man this control center during site casualties are specially trained to coordinate site emergency actions including actions to immediately contain and clean up any oil spill on site.

The Kesselring Site maintains an emergency response manual, which outlines basic emergency response actions (Reference D). The basic actions for a spill of oil are contained in this SPCC Plan. The Kesselring Site also maintains a Contingency Plan (Reference H), which includes a list of the Emergency Directors and their contact information. These individuals would serve as the facility response coordinators.

Materials are available on the Kesselring Site to support the isolation and cleanup of any oil spills. These materials include, but are not limited to, absorbents, inflatable bladders, and containment booms. These materials are only used during an emergency situation, drill, or spill response. A portable spill response trailer is maintained on the site, which contains this equipment. Additional materials are available from several storage locations on site. Waste generated from an oil spill response will be managed in accordance with References C and G.

More specifically, all materials recovered from an oil spill response will be appropriately containerized and labeled as to contents, date, and nature of origination, etc. The facility will make a hazardous waste determination of each such containerized waste, in accordance with applicable federal and/or state regulations for hazardous and otherwise regulated wastes. This will include, in part: 1) a review of the waste vis-à-vis listed hazardous wastes; 2) a review of the waste vis-à-vis the hazardous waste characteristics; 3) a review of the waste vis-à-vis mixtures of the waste with other hazardous wastes; and 4) knowledge of the waste's characteristics, including review of appropriate Material Safety Data Sheets. If the recovered material is determined to be a regulated waste, it will be managed and disposed of in accordance with applicable requirements, including the requirements for waste manifesting, if applicable. If the recovered material is determined to be non-regulated, it will be managed as part of the facility's routine solid waste stream.

## 2. SPILL CONTINGENCY PLAN

The spill contingency plan has been developed to coordinate immediate response from site personnel. This ensures that an oil spill is contained and cleaned up on site in a quick and efficient manner. The basic actions for a spill of oil on the site are outlined below.

## A. Spills within Secondary Containment Systems

The requirements in this section apply to releases of oil in permanent and temporary/portable secondary containment systems.

1. Isolate the source of the oil.
2. Verify the secondary containment drain is isolated.
3. Cleanup the spilled oil within 24 hours of discovery using absorbent materials.
  - i. For spills to secondary containment systems located outdoors, the affected areas must be visually free of oil before the reuse of the containment, or
  - ii. Alternatively, the first batch of stormwater following a spill event can be tested prior to discharge to determine whether the water is acceptable for discharge.
4. Properly dispose of waste in accordance with local procedures.

## B. Oil in Site Storm Drain System

1. Isolate source of oil from further discharging into storm drains.
2. Shut the effective sluice gate to isolate the oil from the site ditches.
3. Place absorbent sponges or pads in storm sewer to absorb the oil.
4. For a large spill, use an oil skimmer to remove as much oil as possible from the storm drain.
5. Once a majority of the oil has been cleaned up, open the effected sluice gate and flush any residual to the site ditches.
6. Clean up the residual oil in the ditches using the next procedure.

## C. Oil in Site Ditches

1. Shut sluice gate in affected ditch and ensure sluice gate is leak tight. Install an inflatable bladder if necessary.
2. Visually observe downstream to verify the absence of a visible oil sheen.
3. Proceed with cleanup as follows:
  - i. An oil skimmer may be utilized to pump floating oil into appropriate containers.

- ii. Place absorbent sponges, absorbent pads, or absorbent logs into the affected area to absorb and contain the spillage.
- iii. Remove and replace the absorbent material as necessary to clean up the spillage. Place saturated materials into appropriate containers for disposal.
- iv. Once the oil has been cleaned up, remove any contaminant-impregnated soil from the ditch banks and containerize for disposal. The overall clean up of the discharged oil and all associated contaminated media must be completed fully consistent with applicable regulatory requirements.
- v. Visually inspect all oil-impacted areas to verify that oil cleanup has been completed fully consistent with applicable regulatory requirements.
- vi. Obtain permission from Environmental Engineering prior to opening any sluice gate and discharging the liquid.

D. Oil in the Site Lagoon

- 1. Secure all discharges from the lagoon.
- 2. Check the outfalls for evidence of leakage and install inflatable bladders as necessary.
- 3. Visually inspect Glowegee Creek for evidence of oil.
- 4. Proceed with cleanup as follows:
  - i. An oil skimmer may be utilized to pump floating oil into appropriate containers.
  - ii. Place absorbent sponges, absorbent pads, or absorbent logs into the affected area to absorb and contain the spillage.
  - iii. Remove and replace the absorbent material as necessary to clean up the spillage. Place saturated materials into appropriate containers for disposal.
  - iv. Once the oil has been cleaned up, remove any contaminant-impregnated soil from the lagoon banks and containerize for disposal. The overall clean up of the discharged oil and all associated contaminated media must be completed fully consistent with applicable regulatory requirements.

- v. Visually inspect all oil-impacted areas to within the lagoon to verify that oil cleanup has been completed fully consistent with applicable regulatory requirements.
- vi. Obtain permission from Environmental Engineering prior to opening any sluice gate and discharging the liquid.

### 3. EMERGENCY NOTIFICATION PROCEDURES

If a release of oil occurs outside agencies may require notification. Naval Reactors Laboratory Field Office (NRLFO) must approve these notifications.

The procedure for making required notifications follows. Once NRLFO has approved the call, open the shared KAPL database where regulatory notifications are documented. Go to the Spill Report section of the database. Complete the data fields with the information regarding the event, to the extent it is known at the time of the call. Mark the report as applicable to the Kesselring Site. The physical address, 350 Atomic Project Road, West Milton, NY 12020 should be given as the location. The direct phone number of the person who should be contacted for further information should be given as the contact phone number. A description should be given for the event, and any completed, ongoing, or planned response to the event. Note that all outside notifications regarding the event should be documented in this database, although some notifications may be entered in the Specific Contacts section rather than the Spill Reports section of the database. Details regarding which agencies must be notified as follows.

The NYSDEC Spill Hotline must be notified within two hours of discovery of a spill, leak, or discharge of petroleum in excess of the reporting limits. This call may result in a call from a New York State Regional Spill Engineer.

The United States Coast Guard National Response Center must be notified immediately of any spill, leak, or discharge of oil which enters Glowegee Creek or Kayaderosseras Creek and causes a film upon or discoloration of the surface of the water or adjoining shorelines or causes a sludge or emulsion to be deposited beneath the surface of the water or upon adjoining shorelines.

The NYSDEC must be notified of all oil spills that enter Glowegee Creek or Kayaderosseras Creek.

Other agencies may need to be contacted as determined by the Emergency Director. The spread of oil downstream may require notification of local police and fire departments as a safety consideration or for assistance in cleanup actions.

Outside Emergency Phone Numbers:

1. U.S. Coast Guard National Response Center (NRC) - 1-800-424-8802
2. NYSDEC Spill Hotline - (518) 457-7362

3. NYSDEC Regional Water Office – (518) 623-1200

4. New York State Regional Spill Response Engineer – (518) 623-1200

4. TRAINING

The Manager, Kesselring Site Operation Environment, Safety and Health, is responsible for oil spill prevention. All Kesselring Site employees review environmental controls in an annual "All Hands" indoctrination. Subcontractor personnel must also watch this indoctrination video prior to commencing work at the Kesselring Site. All Navy staff personnel working at the site receive initial indoctrination and continuing annual refresher training for "environmental protection." All Navy students receive indoctrination training for environmental, safety, and health subjects.

The "All Hands" indoctrination provided to all Kesselring Site employees and subcontractors includes information about:

- Oil or chemical spill response actions
- Controls on discharges to storm drains
- Air emission points
- Solid and liquid waste disposal

Each organization owning SPCC jurisdictional oil storage inventory (Section 2, above) will operate under a designated Organization Designated Accountable Person who is accountable for oil discharge prevention and who reports to facility management. The Organization Designated Accountable Person (or his/her designee) will have the following roles and responsibilities:

1. Responsible for oil discharge prevention for the Organization's SPCC jurisdictional oil storage inventory (Section 2, above).
2. Maintain the completeness and accuracy of the Organization's SPCC jurisdictional oil storage inventory (Section 2, above).
3. Develop and maintain the roster of the Organization's SPCC oil-handling personnel.
4. Ensure all applicable and appropriate Organization SPCC oil-handling personnel understand the required operation, maintenance, and monitoring of the Organization's SPCC jurisdictional oil inventory to prevent an oil discharge.
5. Ensure all SPCC oil-handling personnel for the Organization receive initial and annual refresher SPCC training.
6. Designate staff assignment for completion of the required SPCC monthly visual inspections (Section 4.1, above).

7. Designate staff assignment for completion of the required SPCC tank integrity testing (Section 4.3. above).

All oil-handling personnel are subject to annual training requirements. These include:

1. At a minimum, oil-handling personnel are trained in the operation and maintenance of equipment to prevent discharges; discharge procedure protocols; applicable pollution control laws, rules and regulations; general facility operations; and the content of the facility SPCC Plan.
2. Discharge prevention briefings are conducted for oil-handling personnel at least once a year to assure adequate understanding of the SPCC Plan for the facility. Such briefings must highlight and describe known discharges as described in §112.1(b) or failures, malfunctioning components and any recently developed precautionary measures.
3. All oil handling personnel are subject to training requirements, regardless of tenure. New employees assigned to SPCC jurisdictional oil handling work must complete the oil-handling personnel training session prior to initiating this work assignment.
4. Subcontractors (NNS) will also document this required training.
5. All training records will be retained onsite for at least three (3) years.

## 1. SPCC REGULATION CROSS-REFERENCE WITH SPCC PLAN

The following table provides a cross-reference for the requirements listed in the current SPCC Regulations (40 CFR Part 112) with the location within this SPCC Plan (by Section) where these requirements are addressed and discussed.

SPCC Requirement *	Summary Description of Requirement	SPCC §
§ 112.1	Applicability.	1.1
§ 112.3(d)	SPCC Plan certified by a Licensed Professional Engineer.	Front matter
§ 112.3(e)	SPCC Plan is maintained at facility and available to EPA.	1.1
§ 112.4(a)	EPA reportable discharges within a 12 month period.	1.1
§ 112.5(b)	SPCC Plan reviewed every 5 years or within 6 months of a significant change.	1.1
§ 112.7	<b>General requirements for SPCC Plans for all facilities</b>	
§ 112.7	SPCC Plan has Management approval to commit resources.	Front matter
§ 112.7	Cross reference SPCC Plan with SPCC Rule.	7.1
§ 112.7(a)(1)	General requirements: discussion of facility's conformance with rule requirements.	1.1
§ 112.7(a)(2)	Comply with applicable requirement listed in this part and reasons for any deviations from the Plan requirements.	Entire Plan
§ 112.7(a)(3)	Describe the physical site layout and include a facility diagram.	1.4; Attachment 8.4
§ 112.7(a)(3)(i)	Address the type of oil in each fixed container and its storage capacity.	2.0
§ 112.7(a)(3)(ii)	Address discharge prevention measures including procedures for routine handling of products (loading, unloading, and facility transfers).	2.0
§ 112.7(a)(3)(iii)	Address discharge or drainage controls such as secondary containment around containers and other structures, equipment and procedures for control of a discharge.	2.0 & 6.0
§ 112.7(a)(3)(iv)	Address countermeasures for discharge discovery, response, and cleanup.	6.1 – 6.3
§ 112.7(a)(3)(v)	Address methods of disposal of recovered materials in accordance with applicable legal requirements	6.1
§ 112.7(a)(4)	Describe spill reporting information.	6.3
§ 112.7(a)(5)	Describe emergency procedures.	6.1 – 6.3
§ 112.7(b)	Where experience indicates a reasonable potential for equipment failure, include a prediction of the direction, rate of flow, and the total quantity of oil that could be discharged from the facility.	2.0
§ 112.7(c)	General secondary containment performance standard.	2.0
§ 112.7(d)	Impracticability determination.	N/A
§ 112.7(e)	Inspections, tests, and records.	4.0; Attachment 8.6
§ 112.7(f)	Employee training and discharge prevention procedures.	6.0
§ 112.7(g)	Security.	5.0
§ 112.7(h)	Facility tank car and tank truck loading/unloading rack.	N/A

SPCC Requirement *	Summary Description of Requirement	SPCC §
§ 112.7(i)	Brittle fracture evaluation requirements.	2.0
§ 112.7(j)	Conformance with State requirements.	7.2
§ 112.7(k)	Qualified Oil-filled Operational Equipment.	N/A
§ 112.8	<b>Requirements for onshore facilities (excluding production facilities)</b>	
§ 112.8(a)	General and specific requirements.	Entire Plan
§ 112.8(b)	Facility drainage.	1.5 & 2.0
§ 112.8(c)	Bulk storage containers.	2.0
§ 112.8(d)	Facility transfer operations, pumping, and process.	3.0
§ 112.20	Facility Response Plan Applicability.	1.0

\* Only relevant SPCC rule requirements are indicated. For a complete list of SPCC plan requirements refer to 40 CFR 112.

## 2. STATE REGULATIONS AND GUIDELINES FOR OIL DISCHARGE PREVENTION AND CONTAINMENT

### A. New and Used/Waste Oil

The New York State Petroleum Bulk Storage (PBS) Regulations (6 NYCRR Parts 612-614) apply to all aboveground and underground petroleum storage tanks at a facility that has a total petroleum storage capacity in tanks of more than 1,100 gallons. The NYSDEC administers the PBS program. Key requirements of this program are summarized below: the regulations must be consulted for more detailed information.

#### Part 612 – Registration of Petroleum Bulk Storage Facilities

- §612.1(c) provides definitions for the terms used by the PBS program. They clarify, in part, the specific applicability of the overall PBS program to individual facilities.
- §612.2 requires registration of petroleum storage facilities, including any out-of-service facilities that have not been permanently closed, with the NYSDEC. New facilities must be registered prior to being placed into service, and the NYSDEC must be notified within thirty days prior to substantially modifying an existing storage facility. The NYSDEC registration certificate must be displayed on the facility premises at all times.
- §612.5 provides for delegation of administration of the PBS program to certain local government agencies upon specific approval by the NYSDEC.

#### Part 613 – Handling and Storage of Petroleum

- §613.1(g) identifies technical references cited in Part 613.
- §613.2 requires any facility located in a flood plain (as defined by 6 NYCRR Part 500) to be safeguarded against buoyancy and lateral movement by flood

waters in accordance with the operating standards set forth in National Fire Protection Association (NFPA) Code No. 30, and in accordance with State and local flood plain regulations. This section also specifies operational standards that must be complied with in the event that tanks are to be ballasted with water during flood plain warning periods.

- §613.3(a) details minimum requirements for facilities and carrier personnel for petroleum transfer events, to prevent transfer spills and accidental discharges.
- §613.3(b) requires permanent marking (color and symbol code) of all tank fill ports to identify the tank product, in accordance with American Petroleum Institute guidelines, as detailed in this section.
- §613.3(c)(1) requires that all dispensers of motor fuel under pressure from a remote pumping system be equipped with a shear valve (impact valve) located in the supply line of the dispenser.
- §613.3(c)(3)(i) requires that all ASTs be equipped with a gauge (or equivalent device or system) that accurately shows the level of oil in the tank. That gauge (or equivalent) must be accessible to the carrier and installed such that it can be conveniently read.
- §613.3(c)(3)(ii) requires that the design capacity, working capacity (usually 90% of design), and the PBS tank identification number be clearly marked on each AST and at any remote gauge.
- §613.3(c)(4) requires all fill pipes leading to a pump-filled tank be equipped with a properly functioning check valve (or equivalent device) that provides automatic backflow protection, if the fill piping arrangement is such that backflow from the receiving tank is possible.
- §613.3(c)(5) requires that each tank connection through which oil can normally flow be equipped with an appropriate operating valve to control the flow.
- §613.3(c)(6)(i) and (ii) specify location and capacity thresholds above which ASTs must be equipped with a secondary containment system. Minimum design standards for such secondary containments are also specified in these sections.
- §613.3(d) specifies that the facility must maintain all gauges, valves, and other equipment for spill prevention in good working order.
- §613.4 outlines the requirements for daily inventory monitoring of USTs.
- §613.5(a) outlines the requirements for periodic tightness testing of USTs, including the schedule for initial testing, the qualifications of the test technician and the contents of the test report.
- §613.6(a) specifies that ASTs must be inspected at least monthly, for specified items.
- §613.6(b) outlines requirements for ten-year inspections of specified ASTs, including the schedule for the initial ten-year inspection and technical criteria for each ten-year inspection.
- §613.6(c) outlines requirements for keeping the monthly and ten-year inspection reports for at least ten years each, and specifies the minimum inspection information that must be documented.

- §613.6(d) specifies minimum response measures that must be promptly taken in the event that a monthly and/or ten-year inspection of an aboveground tank reveals a deficiency.
- §613.6(e) specifies that if any portion of a facility is not inspected as required, the uninspected portion must be taken out-of-service, in accordance with the requirements of §613.9.
- §613.9 details requirements for the closure of out-of-service tanks, including closure of tanks temporarily out-of-service, closure of tanks permanently out-of-service, reporting to the NYSDEC of out-of-service tanks, and criteria for the reuse of used tanks.

#### **Part 614 – Standards for New and Substantially Modified Petroleum Storage Facilities**

- §614.1(a) and (b) note that Part 614 sets forth standards for all petroleum facilities that are new or substantially modified after December 27, 1985.
- §614.1(h) identifies technical references used in Part 614.
- §614.2 outlines general requirements for new USTs.
- §614.3 details minimum requirements for new USTs, including for labeling, wear plates, and pressure testing, and sets design standards for fiberglass-reinforced-plastic (FRP) tanks, cathodically protected steel tanks, steel tanks clad with FRP, and double-walled tanks.
- §614.4 details minimum standards for secondary containment for USTs.
- §614.5 details monitoring requirements for USTs.
- §614.6 details minimum standards for reconditioning a UST.
- §614.7 outlines requirements for installation of underground facilities.
- §614.8 outlines general requirements for new ASTs.
- §614.9 details design standards for new ASTs.
- §614.10 details requirements for impermeable barriers under AST tank bottoms.
- §614.11 specifies requirements for monitoring systems for new ASTs.
- §614.12 outlines requirements for repairing and reconditioning ASTs.
- §614.13 details requirements for installation of new aboveground facilities.
- §614.14 specifies requirements for new underground piping systems.

For tanks #005 and #006:

- Documentation is not presently available to confirm that these two tanks are presently provided with conforming secondary containment for their single-walled tank bottom (§613.3(c)(6)). Reference Section 2.2.A and B, above.
- The facility's NYSDEC PBS Registration Certificate indicates that these two tanks are located aboveground – in contact with impervious barrier. This listing is inconsistent with the tanks' apparent construction design – installed on a reinforced concrete ringwall with a granular drainage media provided within the interior of the ringwall. Reference Section 2.2.A and B, above. It is anticipated that the Registration will be appropriately revised during 2014.

- The S8G Waste Oil Collection Tank is not registered with NYSDEC (§612.2)

The Kesselring Site is otherwise in compliance with these requirements. A copy of the facility's current PBS Certificate is provided in Attachment 8.2.

B. Used Oil

Used oil is additionally regulated in New York State under the 6 NYCRR Subpart 374-2: Standards for the Management of Used Oil. Pertinent requirements of Subpart 374-2 are summarized below; the regulations must be consulted for detailed requirements.

- §374-2.1 provides definitions for the terms used by Subpart 374-2.
- §374-2.2 outlines the applicability of the various components of Subpart 374-2.
- §374-2.3 outlines standards for used oil generators.
- §374-2.3(c)(2) specifies that all aboveground and underground used oil tank systems, regardless of tank size, must comply with designated sections of 6 NYCRR Parts 612-614.
- §374-2.3(c)(7) specifies that used oil must be stored in containers that are in good condition (no severe rusting, no apparent structural defects or deterioration) and are not visibly leaking.
- §374-2.3(c)(8)(i) requires that all containers and aboveground used oil tanks used to store used oil must be clearly labeled or marked with the design capacity and working capacity of the tank and with the words "Used Oil."

The S8G Waste Oil Collection Tank is not registered with NYSDEC (§612.2). The Kesselring Site is otherwise in compliance with these requirements.

- 8.1 Certification of the Applicability of the Substantial Harm Criteria
- 8.2 NYSDEC Petroleum Bulk Storage Certificate
- 8.3 Kesselring Site Location Map
- 8.4 Kesselring Site Facility Diagram
- 8.5 Secondary Containment Calculations
- 8.6 Visual Inspection Forms
- 8.7 List of Revisions

Attachment 8.1

Certification of the Applicability of the Substantial  
Harm Criteria

Certification of the Applicability of the Substantial Harm Criteria  
(Reference: 40 CFR 112, Attachment C-II)

Facility Name: USDOE - Knolls Atomic Power Laboratory - Kesselring Site  
Facility Addresses: 350 Atomic Project Road, West Milton, NY 12020-2817

1. Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

Yes ☐ No ☒

2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area?

Yes ☐ No ☒

3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula<sup>1</sup>) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's "Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments" (see Appendix E to this part, section 13, for availability) and the applicable Area Contingency Plan.

Yes ☐ No ☒

4. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula<sup>1</sup>) such that a discharge from the facility would shut down a public drinking water intake<sup>2</sup>?

<sup>1</sup> If a comparable formula is used documentation of the reliability and analytical soundness of the comparable formula must be attached to this form.

<sup>2</sup> For the purposes of 40 CFR part 112, public drinking water intakes are analogous to public water systems as described at 40 CFR 143.2(c).

Yes ☐ No ☒

5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil discharge in an amount greater than or equal to 10,000 gallons within the last 5 years?

Yes ☐ No ☒

Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

(b) (7)(C), (b) (6)

Signature

(b) (7)(C), (b) (6)

Name (please type or print)

Manager, Kesselring Site Operation

Title

Date

2/4/13

Attachment 8.2

NYSDEC Petroleum Bulk Storage Certificate



S Number

414506

New York State Department of Environmental Conservation  
**PETROLEUM BULK STORAGE CERTIFICATE**  
625 Broadway, 11th Floor, Albany, NY 12233-7020 Phone: 518-402-9553

Region 5 NYSDEC - PBS Unit  
Route 86, P.O. Box 296  
Ray Brook, NY 12977-0296  
(518) 897-1241

<u>TANK NUMBER</u>	<u>TANK LOCATION</u>	<u>DATE INSTALLED</u>	<u>TANK TYPE</u>	<u>PRODUCT STORED</u>	<u>CAPACITY (GALLONS)</u>	<u>DATE LAST TESTED</u>	<u>TESTING DUE DATE</u>
005	Aboveground - in contact with impervious barrier	11/01/1983	Steel/Carbon Steel/Iron	#2 Fuel Oil	30,000		*
006	Aboveground - in contact with impervious barrier	11/01/1983	Steel/Carbon Steel/Iron	#2 Fuel Oil	60,000		*
012	Aboveground - No Contact (on saddles, legs, rack, cradle, etc.)	01/01/1976	Steel/Carbon Steel/Iron	Diesel	5,000		*
013	Aboveground - No Contact (on saddles, legs, rack, cradle, etc.)	01/01/1976	Steel/Carbon Steel/Iron	Diesel	5,000		*
014	Aboveground - No Contact (on saddles, legs, rack, cradle, etc.)	01/01/1976	Steel/Carbon Steel/Iron	Diesel	550		*
015	Aboveground - No Contact (on saddles, legs, rack, cradle, etc.)	01/01/1976	Steel/Carbon Steel/Iron	Diesel	550		*
025	Aboveground - in contact with impervious barrier	01/01/1973	Steel/Carbon Steel/Iron	Diesel	50		*
028	Underground	08/01/1990	Fiberglass Coated Steel	Diesel	2,250		
030	Aboveground - No Contact (on saddles, legs, rack, cradle, etc.)	07/01/1992	Steel/Carbon Steel/Iron	Biodiesel	4,000		*
038	Aboveground - No Contact (on	08/01/1998	Steel/Carbon Steel/Iron	Diesel	59		*

OWNER:  
USDOE-KNOLLS ATOMIC POWER  
P O BOX 1069  
SCHENECTADY, NY 12301-1069

SITE:  
USDOE KNOLLS ATOMIC POWER  
KESSELRING SITE  
350 ATOMIC PROJECT ROAD  
BALLSTON SPA, NY 12020-2817

ON-SITE BECHTEL MARINE PROPULSION  
OPERATOR: (518) 884-1374  
PRIMARY  
OPERATOR:  
EMERGENCY KSO SECURITY  
CONTACT: (518) 884-1406

## MAILING CORRESPONDENCE:

D.A. DELWICHE  
USDOE-KNOLLS ATOMIC POWER LABORATORY  
P O BOX 1069  
SCHENECTADY, NY 12301-1069

ISSUED BY: Commissioner  
(b) (7)(C), (b) (6)  
PBS NUMBER: 5-414506  
DATE ISSUED: 08/20/2012  
EXPIRATION DATE: 08/17/2017  
FEE PAID: \$500.00

As an authorized representative of the above named facility, I affirm under penalty of perjury that the information displayed on this form is correct to the best of my knowledge. Additionally, I recognize that I am responsible for assuring that this facility is in compliance with all sections of 6 NYCRR Parts 612, 613 and 614, and applicable sections of 6 NYCRR Subpart 374-2 (used oil tanks only), not just those cited below:

- The facility must be re-registered if there is a transfer of ownership.
- The Department must be notified within 30 days prior to adding, replacing, reconditioning, or permanently closing a stationary tank.
- The facility must be operated in accordance with the code for storing petroleum, 6 NYCRR Part 613.
- Any new facility or substantially modified facility must comply with 6 NYCRR Part 614.
- This certificate must be signed and posted on the premises at all times.
- Posting must be at the tank, at the entrance of the facility, or the main office where the storage tanks are located.
- Any person with knowledge of a spill, leak or discharge must report the incident to the Department within two hours (1-800-457-7362).

Signature of Representative/Owner

8/31/12  
Date

(b) (7)(C), (b) (6) MGR, NRLFO  
Name and Title of Authorized Representative/Owner (Please Print)



S Number  
414506

New York State Department of Environmental Conservation  
**PETROLEUM BULK STORAGE CERTIFICATE**  
625 Broadway, 11th Floor, Albany, NY 12233-7020 Phone: 518-402-9553

Region 5 NYSDEC - PBS Unit  
Route 86, P.O. Box 296  
Ray Brook, NY 12977-0296  
(518) 897-1241

<u>TANK NUMBER</u>	<u>TANK LOCATION</u>	<u>DATE INSTALLED</u>	<u>TANK TYPE</u>	<u>PRODUCT STORED</u>	<u>CAPACITY (GALLONS)</u>	<u>DATE LAST TESTED</u>	<u>TESTING DUE DATE</u>
039	saddles, legs, rack, cradle, etc.) Aboveground - No Contact (on saddles, legs, rack, cradle, etc.)	08/01/2001	Steel/Carbon Steel/Iron	Diesel	4,000		*
040	Aboveground - in contact with impervious barrier	11/01/2004	Steel/Carbon Steel/Iron	Diesel	135		*

\* Aboveground tanks require monthly visual inspections and may need documented internal inspections as described in 6 NYCRR Part 613

**OWNER:**  
USDOE-KNOLLS ATOMIC POWER  
P O BOX 1069  
SCHENECTADY, NY 12301-1069

**SITE:**  
USDOE KNOLLS ATOMIC POWER  
KESSELRING SITE  
350 ATOMIC PROJECT ROAD  
BALLSTON SPA, NY 12020-2817

**ON-SITE** BECHTEL MARINE PROPULSION  
**OPERATOR:** (518) 884-1374  
**PRIMARY  
OPERATOR:**  
**EMERGENCY KSO SECURITY  
CONTACT:** (518) 884-1406

**MAILING CORRESPONDENCE:**

D.A. DELWICHE  
USDOE-KNOLLS ATOMIC POWER LABORATORY  
P O BOX 1069  
SCHENECTADY, NY 12301-1069

As an authorized representative of the above named facility, I affirm under penalty of perjury that the information displayed on this form is correct to the best of my knowledge. Additionally, I recognize that I am responsible for assuring that this facility is in compliance with all sections of 6 NYCRR Parts 612, 613 and 614, and applicable sections of 6 NYCRR Subpart 374-2 (used oil tanks only), not just those cited below:

- The facility must be re-registered if there is a transfer of ownership.
- The Department must be notified within 30 days prior to adding, replacing, reconditioning, or permanently closing a stationary tank.
- The facility must be operated in accordance with the code for storing petroleum, 6 NYCRR Part 613.
- Any new facility or substantially modified facility must comply with 6 NYCRR Part 614.
- This certificate must be signed and posted on the premises at all times. Posting must be at the tank, at the entrance of the facility, or the main office where the storage tanks are located.
- Any person with knowledge of a spill, leak or discharge must report the incident to NYSDEC within two hours (1-800-457-7362).

Signature of Representative/Owner

(b) (7)(C), (b) (6) MGR, NRLFO

Name and Title of Authorized Representative/Owner (Please Print)

9/30/12  
Date

**ISSUED BY:** Commissioner  
(b) (7)(C), (b) (6)  
**PBS NUMBER:** 5-414506  
**DATE ISSUED:** 08/20/2012  
**EXPIRATION DATE:** 08/17/2017  
**FEE PAID:** \$500.00

Attachment 8.3

Kesselring Site Location Map



Kesseling Site Location in Relation to Surrounding Communities

Attachment 8.4

Kesselring Site Facility Diagram

Attachment 8.5

Secondary Containment Calculations

## Attachment 8.5

### KSO Spill Prevention Control and Countermeasure (SPCC) Plan

#### Secondary Containment Volume Calculations/Analysis

##### Reference:

1. Extreme Precipitation Tables, Northeast Regional Climate Center  
(<http://precip.eas.cornell.edu/data.php?1322505813476>). Provided within Enclosure 1a.

##### Calculations/Analysis:

1. Boilerhouse Secondary Containment Structure and Tanks #005, #006 and, #030

Calculations for the net volume provided by the boilerhouse secondary containment structure have been completed by the Site Facilities Engineering (SFE) group and are provided in Enclosure 1a. These calculations indicate that the secondary containment structure provides **84,277 gallons** of secondary containment volume.

§112.8(c)(2) specifies for bulk storage containers that secondary containment must be provided for the entire capacity of the largest single container and sufficient freeboard to contain precipitation.

Tank #006 is the single largest tank in the secondary containment structure (60,000 gallons). The remaining secondary containment volume available for containment of precipitation is calculated as:

$$84,277 \text{ gallons} - 60,000 \text{ gallons} = \mathbf{24,277 \text{ gallons}}$$

The SFE calculations indicate that the total area contributing to collection of incident precipitation for the secondary containment structure is **10,950 square feet**. The amount of precipitation that can be contained by this area, as measured in inches, is calculated as follows:

$$(24,277 \text{ gal}) \times (1/7.48 \text{ gals/cf}) \times (1/10,950 \text{ sf}) \times (12 \text{ inches/ft}) = \mathbf{3.56 \text{ inches}}$$

Examination of the referenced Extreme Precipitation Tables indicate that this amount of precipitation corresponds to a 5-year, 24-hour storm event. The boilerhouse is manned on a continuous 24/7 by trained operators. The operators visually monitor the accumulation of precipitation within the secondary containment structure during rain events. The operators are able to discharge the accumulated precipitation at any time, using prescribed procedures and environmental controls, to preclude an accumulation of precipitation within the secondary containment structure in excess of the 5-year, 24-hour storm event.

The combination of sufficient infrastructure volume to contain the 5-year, 24-hour storm event and the continuous 24/7 manning of the boilerhouse by trained operators (i.e., "active" secondary containment measures) confirms that the boilerhouse secondary containment structure provides sufficient secondary containment to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines for tanks #005, #006 and #030.

## 2. S8G Tanks #012 and #013

These two similar 4,000 gallon diesel fuel tanks are each situated within an individual dimensionally-similar reinforced concrete dike, within an interior building location. Volume allocation for precipitation freeboard is not applicable.

The dike measurements are: L= 198"; W= 144"; H= 47"

SC volume calculation is:

$$(198" \times 144" \times 47") \times (1 \text{ cf}/1728 \text{ cubic inches}) \times 7.48 \text{ gals/cf} = \mathbf{5,800.74 \text{ gallons}}$$

The two dike systems provide sufficient secondary containment volume for their respective 4,000 gallon tanks.

*(Dike field measurements by Ken Gelting on 7/5/12)*

## 3. Derrick Crane - NYS Registered Tank #038

Tank #038 has a capacity of 59.5 gallons and is located within an enclosed structure (the enclosed derrick crane operating/control room). The tank is situated within a welded steel dike.

The dike measurements are: L= 41", W= 17', H=28"

SC volume calculation is:

$$(41" \times 17" \times 28") \times (1 \text{ cf}/1728 \text{ cubic inches}) \times 7.48 \text{ gals/cf} = \mathbf{84 \text{ gallons}}$$

The steel dike system provides sufficient secondary containment for the tank.

*(Dike field measurements by Ken Gelting on 7/5/12)*

## 4. Hydraulic Power Units #1 and #2

These two identical mobile oil-filled operating equipment pieces are used to provide a mobile hydraulic power source for other industrial equipment pieces. The two units' hydraulic system has an oil design capacity of 90 gallons. Both units are provided with an identical retrofitted welded-steel permanently-mounted undercarriage-type secondary containment dike.

The steel dike measurements are: L=80", W= 70", H=6.5"

SC volume calculation is:

$$(80" \times 70" \times 6.5") \times (1 \text{ cf}/1728 \text{ cubic inches}) \times 7.48 \text{ gals/cf} = \mathbf{157.56 \text{ gallons}}$$

The steel dike system provides sufficient secondary containment for the two equipment pieces.

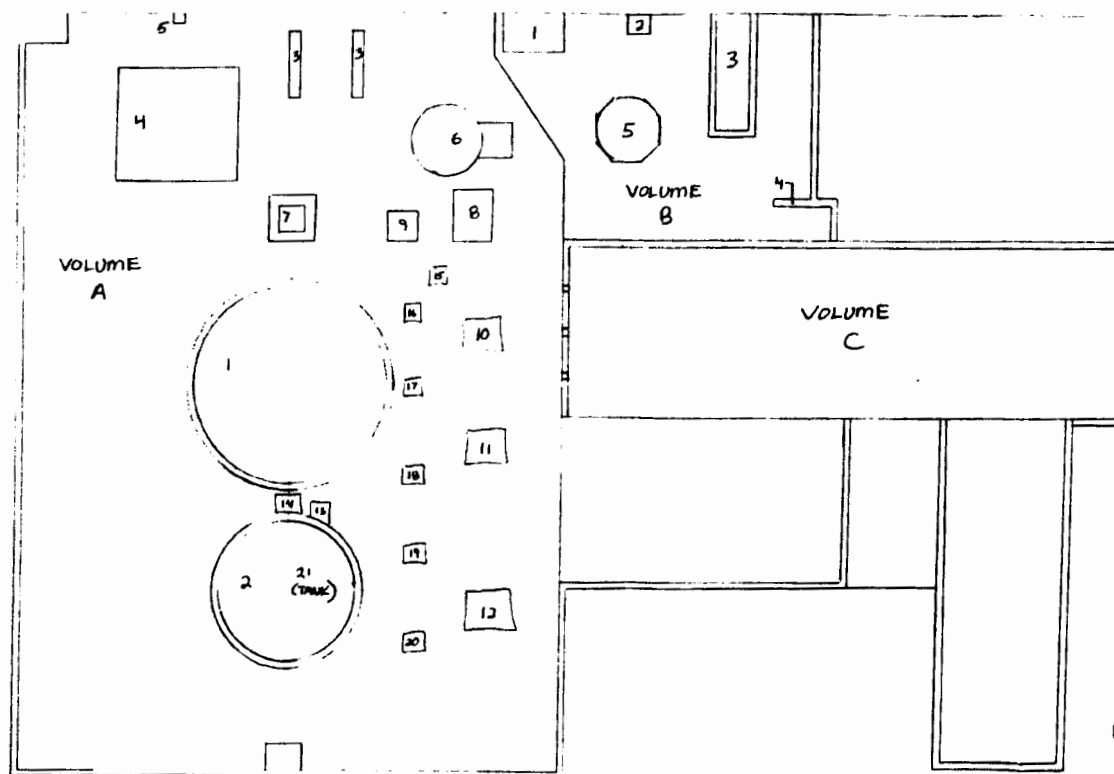
*(Dike field measurements by Ken Gelting on 7/5/12)*

## Enclosures:

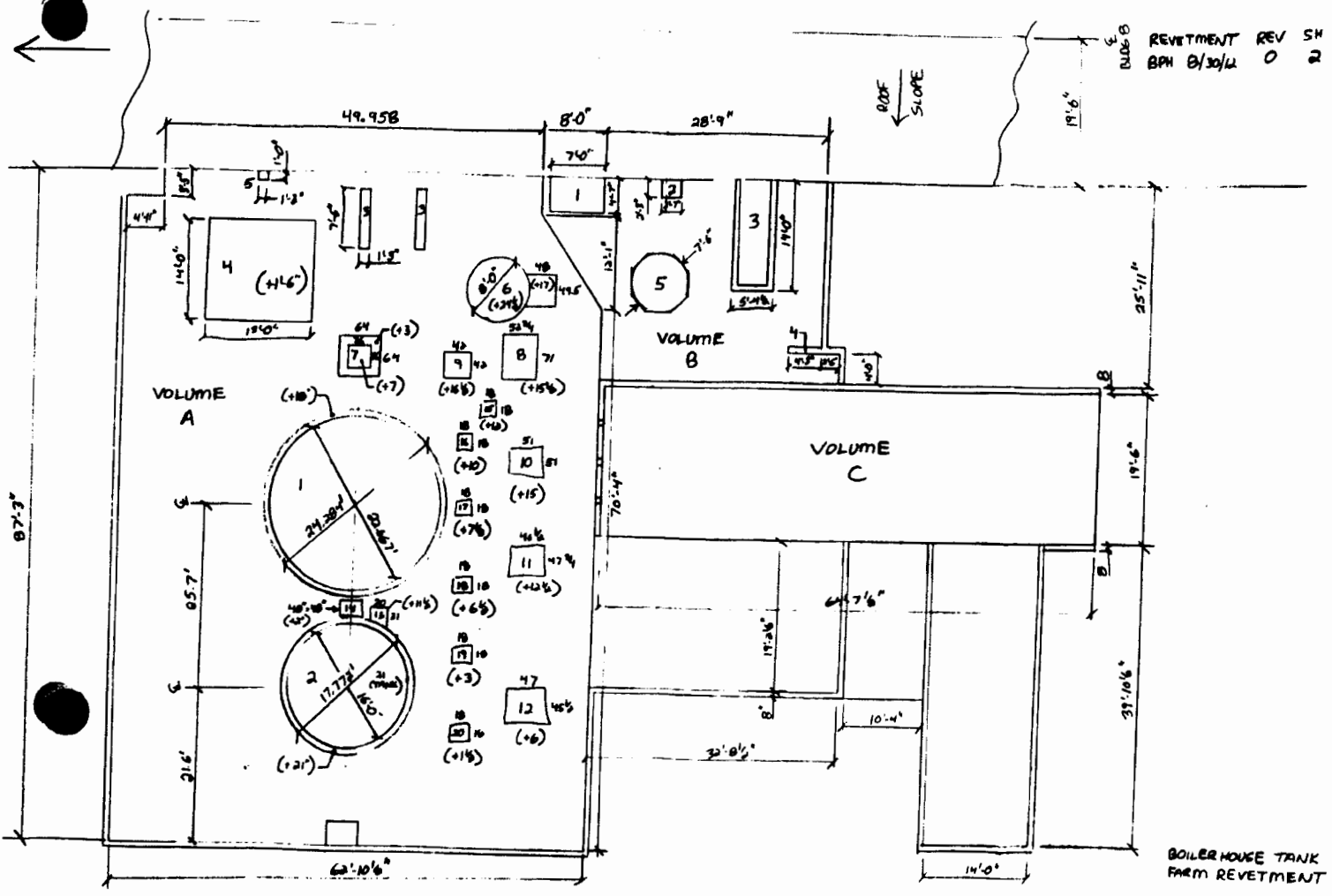
### 1a. Boilerhouse Tank Farm Secondary Containment Volume Calculations

April 2013

REVETMENT REV 3H  
BPH 8/30/12 0 1  
12 Aug 11/12

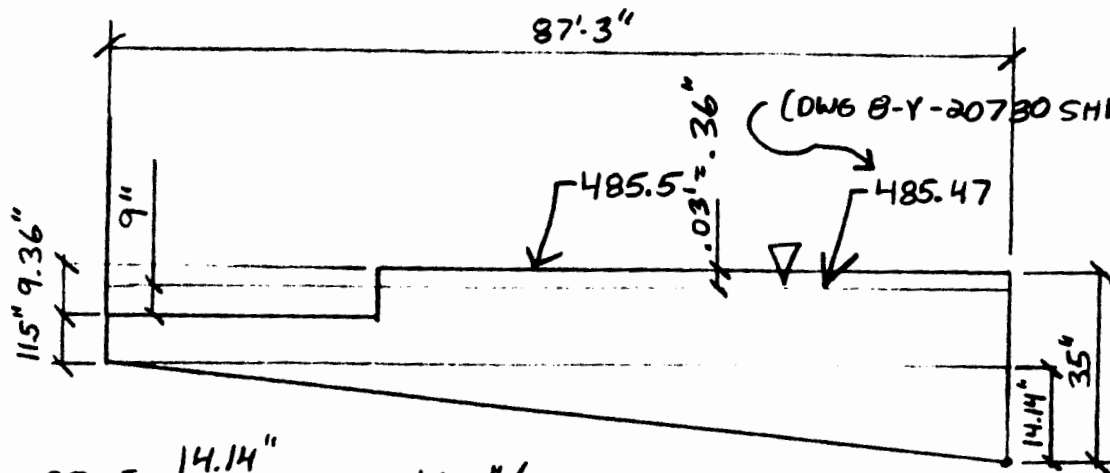


BOILER HOUSE TANK FARM  
REVETMENT



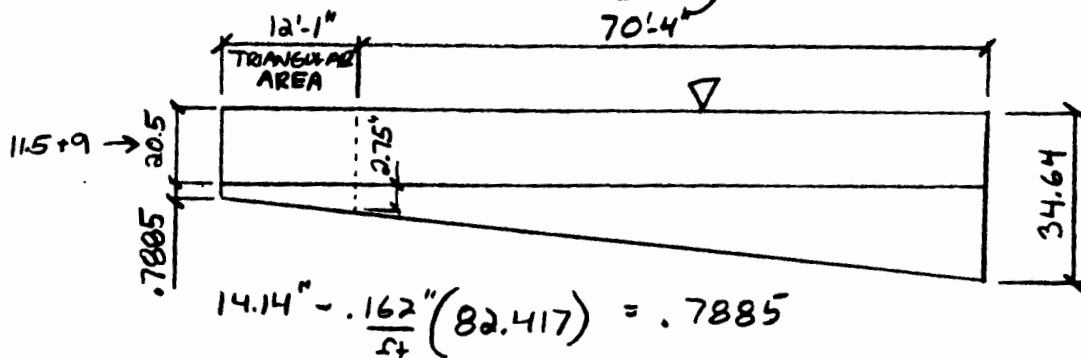
REVETMENT REV 54  
 BDN B  
 BPN 8/30/12 0 2

CONTAINMENT VOLUME A



$$\text{SLOPE} = \frac{14.14''}{87.25'} = .162''/ft$$

AREA 1 :  
(SOUTH PORTION OF CONTAINMENT VOLUME A)



GROSS VOLUME :

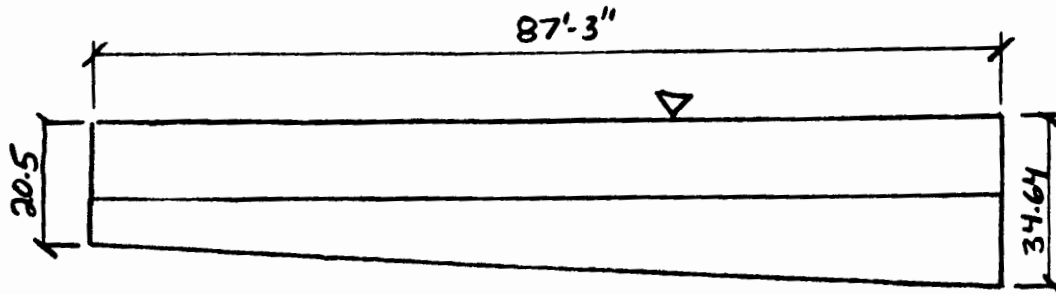
$$(70.33)(23.25/12)(8) + (.5)(70.33)(11.39/12)(8) + (.5)(12.083)(22.269/12)(8)$$

AVG DEPTH OF  
TRIANGULAR AREA

$$= 1447 cf$$

AREA 2:

(MIDDLE PORTION OF CONTAINMENT VOLUME A)

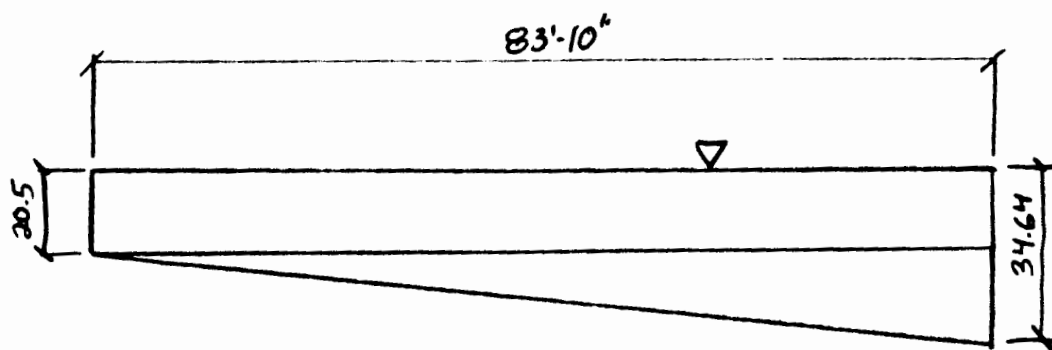


GROSS VOLUME:

$$(87.25)(20.5/12)(49.958) + (.5)(87.25)(14.14/12)(49.958)$$

$$= 10,014 \text{ cf}$$

AREA 3  
(NORTH PORTION OF CONTAINMENT VOLUME A)



GROSS VOLUME:

$$(83.833)(20.5/12)(4.917) + (.5)(83.833)(14.14/12)(4.917) \\ = 947 \text{ cf}$$

TOTAL GROSS VOLUME:

$$1447 + 10,014 + 947 = 12,408 \text{ cf} \left( 7.481 \frac{\text{gal}}{\text{cf}} \right) \\ = 92,824 \text{ gal}$$

SUBTRACT STRUCTURES INSIDE CONTAINMENT VOL A :

$$1) \left(\frac{\pi}{4}\right)(24.284)^2\left(\frac{18}{12}\right) = 694.74 \text{ cf}$$

-14.14 + .162(47.3) = -6.48    6.48 + 11.5 = 17.98  
∴ USE 18"

$$2) \left(\frac{\pi}{4}\right)(17.772)^2\left(\frac{21}{12}\right) = 434.11 \text{ cf}$$

-14.14 + .162(21.6) = -10.64    10.64 + 11.5 = 22.14  
∴ USE 21"

$$3) (2)(1.25)(7.5)\left(\frac{12''+9}{12}\right) = 32.81 \text{ cf}$$

$$4) (14)(13)\left(\frac{18}{12}\right) = 273 \text{ cf}$$

$$5) (1.25)(1)\left(\frac{11.5+9}{12}\right) = 2.14 \text{ cf}$$

$$6) \left(\frac{\pi}{4}\right)(8^2)\left(\frac{22.93}{12}\right) + (4)(4)\left(\frac{17}{12}\right) = 118.72 \text{ cf}$$

.162(15) = 2.43    20.5 + 2.43 = 22.93

$$7) (5.33)(5.33)\left(\frac{3}{12}\right) + (3)(3)\left(\frac{4}{12}\right) = 10.10 \text{ cf}$$

$$8) (5.92)(4.4)\left(\frac{15.5}{12}\right) = 33.65 \text{ cf}$$

$$9) (3.5)(3.5)\left(\frac{16.5}{12}\right) = 16.84 \text{ cf}$$

$$10) (4.25)(4.25)\left(\frac{15}{12}\right) = 22.58 \text{ cf}$$

$$11) (4)(3.9)(12.5/12) = 16.25 \text{ cf}$$

$$12) (3.79)(3.92)(6/12) = 7.43 \text{ cf}$$

$$13) (31/12)(20/12)(11.5/12) = 4.13 \text{ cf}$$

$$14) (4)(4)(2/12) = 2.67 \text{ cf}$$

$$15) (1.5)(1.5)(12/12) = 2.25 \text{ cf}$$

$$16) (1.5)(1.5)(10/12) = 1.88 \text{ cf}$$

$$17) (1.5)(1.5)(7.5/12) = 1.41 \text{ cf}$$

$$18) (1.5)(1.5)(6.5/12) = 1.22 \text{ cf}$$

$$19) (1.5)(1.5)(3/12) = .56 \text{ cf}$$

$$20) (1.5)(1.5)(1.5/12) = .28 \text{ cf}$$

$$21) \left(\frac{\pi}{4}\right)(16.0)^2(9/12) = 150.80 \text{ cf}$$

TOTAL OF STRUCTURES INSIDE CONTAINMENT VOL A:

$$= 1827.57 \text{ cf} \left(7.481 \frac{\text{gal}}{\text{cf}}\right)$$

$$= 13,672 \text{ gal}$$

$$\text{TOTAL NET VOLUME: } 92,824 \text{ gal} - 13,672 \text{ gal} = \underline{79,152 \text{ gal}}$$

# CONTAINMENT VOLUME B

$$\text{DEPTH} = 485.47' - 485.00' = .47$$

(SEE DWG 8-Y-20730 SHEET 1 REV 0 AND 8-Y-20730 SHEET 6)

## GROSS VOLUME:

$$(28.75)(25.92)(.47) + (8)(4.58)(.47) + (2.5)(4)(.47) + (.5)(8)(12.083)(.47) \\ = 394.88 \text{ cf}$$

## SUBTRACT STRUCTURES INSIDE CONTAINMENT:

$$\begin{aligned} & \underbrace{(7)(4.583)(.47)}_{[1]} + \underbrace{(2.583)(2.25)(.47)}_{[2]} + \underbrace{(5.375)(14)(.47)}_{[3]} \\ & + \underbrace{(.67)(4.25)(.47)}_{[4]} + \underbrace{\left(\frac{\pi}{4}\right)(7.5)^2(.47)}_{[5]} \end{aligned}$$

$$= 75.28 \text{ cf}$$

## TOTAL NET VOLUME:

$$= 394.88 \text{ cf} - 75.28 \text{ cf} = 319.6 \text{ cf} \left( \frac{7.48 \text{ gal}}{\text{cf}} \right)$$

$$= \underline{2391 \text{ gal}}$$

CONTAINMENT VOLUME C

DEPTH =  $485.47' - 484.89' = .58'$   
(SEE DWG 8-Y-20730 SHEET 1)

GROSS VOLUME:

$$(.5)(.58')(64.625)(19.5) = 365.45 \text{ cf} \left( \frac{7.481 \text{ gal}}{\text{cf}} \right)$$
$$= \underline{2734 \text{ gal}}$$

KNOLLS ATOMIC  
POWER LABORATORY

REVISION  
BPH

REV.  
0

SH.  
10

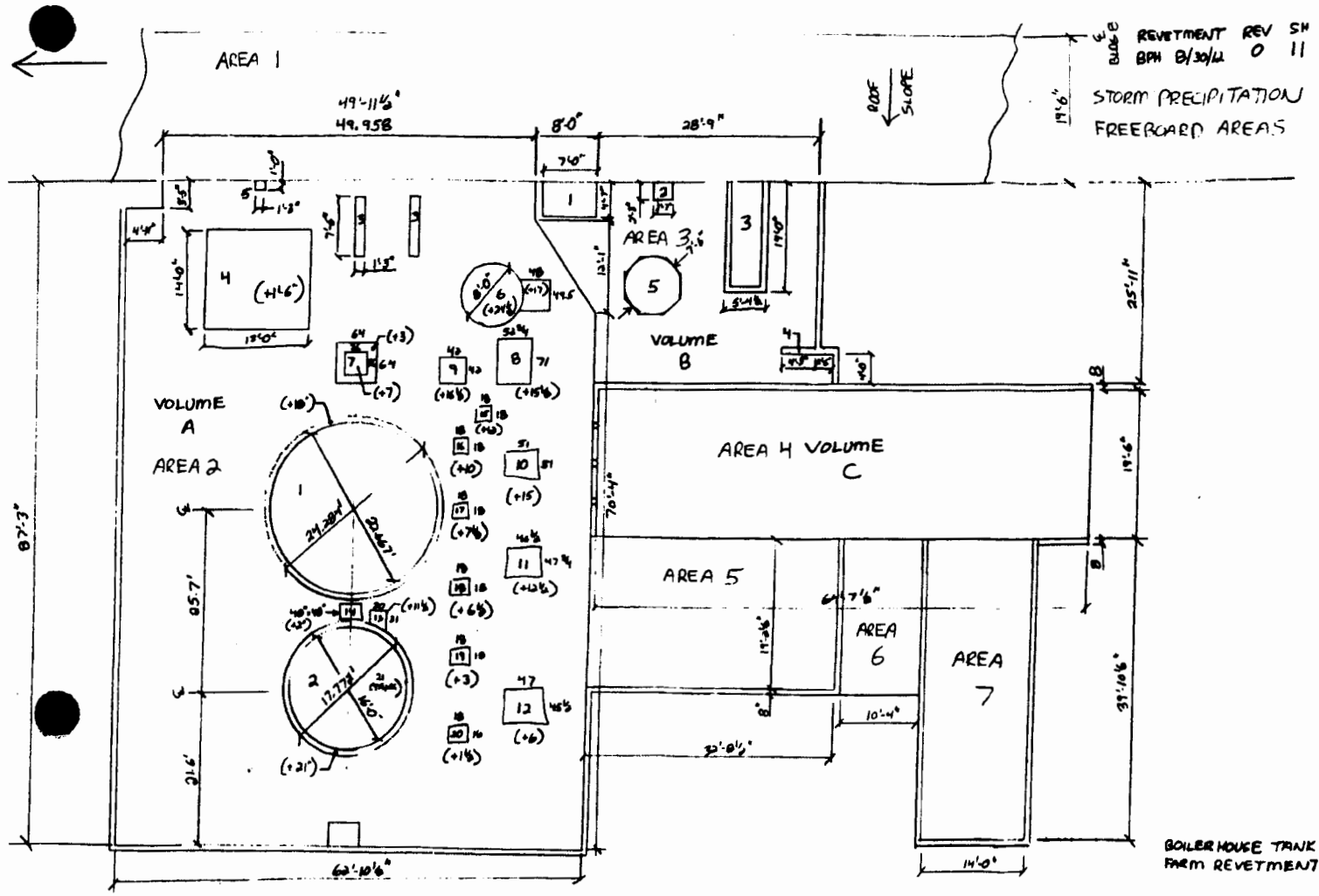
TOTAL NET VOLUME :

$$= 79,152 \text{ gal} + 2,391 \text{ gal} + 2,734 \text{ gal}$$

A                      B                      C

$$= 84,277 \text{ gal}$$

SH.



BOILER HOUSE TANK  
FARM REVETMENT

STORM PRECIPITATION FREE BOARD

AREA 1

$$(19.5')(92.958') = 1812.7 sf$$

AREA 2

$$(64.208)(87.917) = 5644.97 sf$$

AREA 3

$$(29.417)(25.917) + (4.67)(2.5) - (5.375)(14) = 698.8 sf$$

AREA 4

$$(64.625)(20.167) = 1303.3 sf$$

AREA 5

$$(33.375)(19.875) = 663.3 sf$$

AREA 6

$$(10.33)(19.875) = 205.3 sf$$

AREA 7

$$(15.333)(40.542) = 621.6 sf$$

$$\Sigma = 10,950 sf$$

### STORM PRECIPITATION FREE BOARD

25yr, 24hr precipitation estimate for the site = 4.39"

$$\begin{aligned}\text{Free board volume} &= 10,950 \text{ ft}^2 (4.39/12) (7.48 \frac{\text{gal}}{\text{ft}^3}) \\ &= 29,968 \text{ gal}\end{aligned}$$

The final net volume for the base secondary containment area after allocation for precipitation free board is:

$$84,277 \text{ gal} - 29,968 \text{ gal} = 54,309 \text{ gal}$$

54,309 gal < 60,000 gal storage tank

25yr, 12hr precipitation estimate for the site = 3.81"

$$\begin{aligned}\text{Free board volume} &= 10,950 \text{ ft}^2 (3.81/12) (7.48 \frac{\text{gal}}{\text{ft}^3}) \\ &= 26,009 \text{ gal}\end{aligned}$$

The final net volume for the base secondary containment area after allocation for precipitation freeboard is:

$$84,277 \text{ gal} - 26,009 \text{ gal} = 58,268 \text{ gal}$$

58,268 gal < 60,000 gal storage tank

# STORM PRECIPITATION FREE BOARD

25 yr, 6 hr precipitation estimate for the site = 3.26"

$$\text{Free board volume} = 10,950 \text{ ft}^2 (3.26/12) (7.481 \frac{\text{gal}}{\text{ft}^3})$$

$$= 22,254 \text{ gal}$$

The final net volume for the base secondary containment area after allocation for precipitation free board is :

$$84,277 \text{ gal} - 22,254 \text{ gal} = 62,023 \text{ gal}$$

$$62,023 \text{ gal} > 60,000 \text{ gal storage tank}$$

REVTMENT REV :  
BPH 8/30/12 O k

# Extreme Precipitation Tables

## Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	New York
Location	near Ushwy Reservation Atomic Proje, Middle Grove, NY 12850, USA
Longitude	73.954 degrees West
Latitude	43.041 degrees North
Elevation	482 feet
Date/Time	Mon, 28 Nov 2011 13:43:46 -0500

REFERENCE

## Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.50	0.65	0.81	1.01	1yr	0.70	0.96	1.16	1.44	1.77	2.18	2.50	1yr	1.93	2.40	2.78	3.43	3.94	1yr
2yr	0.32	0.50	0.62	0.81	1.02	1.27	2yr	0.88	1.14	1.45	1.76	2.13	2.56	2.89	2yr	2.27	2.78	3.24	3.88	4.42	2yr
5yr	0.38	0.60	0.75	1.00	1.28	1.60	5yr	1.11	1.41	1.82	2.20	2.63	3.11	3.52	5yr	2.76	3.39	3.91	4.59	5.21	5yr
10yr	0.43	0.68	0.86	1.17	1.52	1.90	10yr	1.31	1.65	2.17	2.61	3.09	3.61	4.10	10yr	3.19	3.94	4.50	5.22	5.91	10yr
25yr	0.52	0.82	1.04	1.44	1.91	2.39	25yr	1.64	2.05	2.73	3.26	3.81	4.39	5.01	25yr	3.88	4.82	5.43	6.19	6.98	25yr
50yr	0.58	0.93	1.19	1.68	2.27	2.86	50yr	1.96	2.41	3.26	3.87	4.48	5.09	5.84	50yr	4.51	5.61	6.27	7.05	7.92	50yr
100yr	0.67	1.08	1.40	1.98	2.69	3.40	100yr	2.32	2.83	3.87	4.56	5.24	5.91	6.80	100yr	5.23	6.54	7.24	8.03	8.99	100yr
200yr	0.76	1.25	1.62	2.32	3.21	4.05	200yr	2.77	3.33	4.61	5.39	6.15	6.87	7.93	200yr	6.08	7.63	8.36	9.15	10.20	200yr
500yr	0.92	1.52	1.98	2.88	4.04	5.11	500yr	3.49	4.14	5.79	6.73	7.59	8.38	9.72	500yr	7.42	9.35	10.13	10.88	12.07	500yr

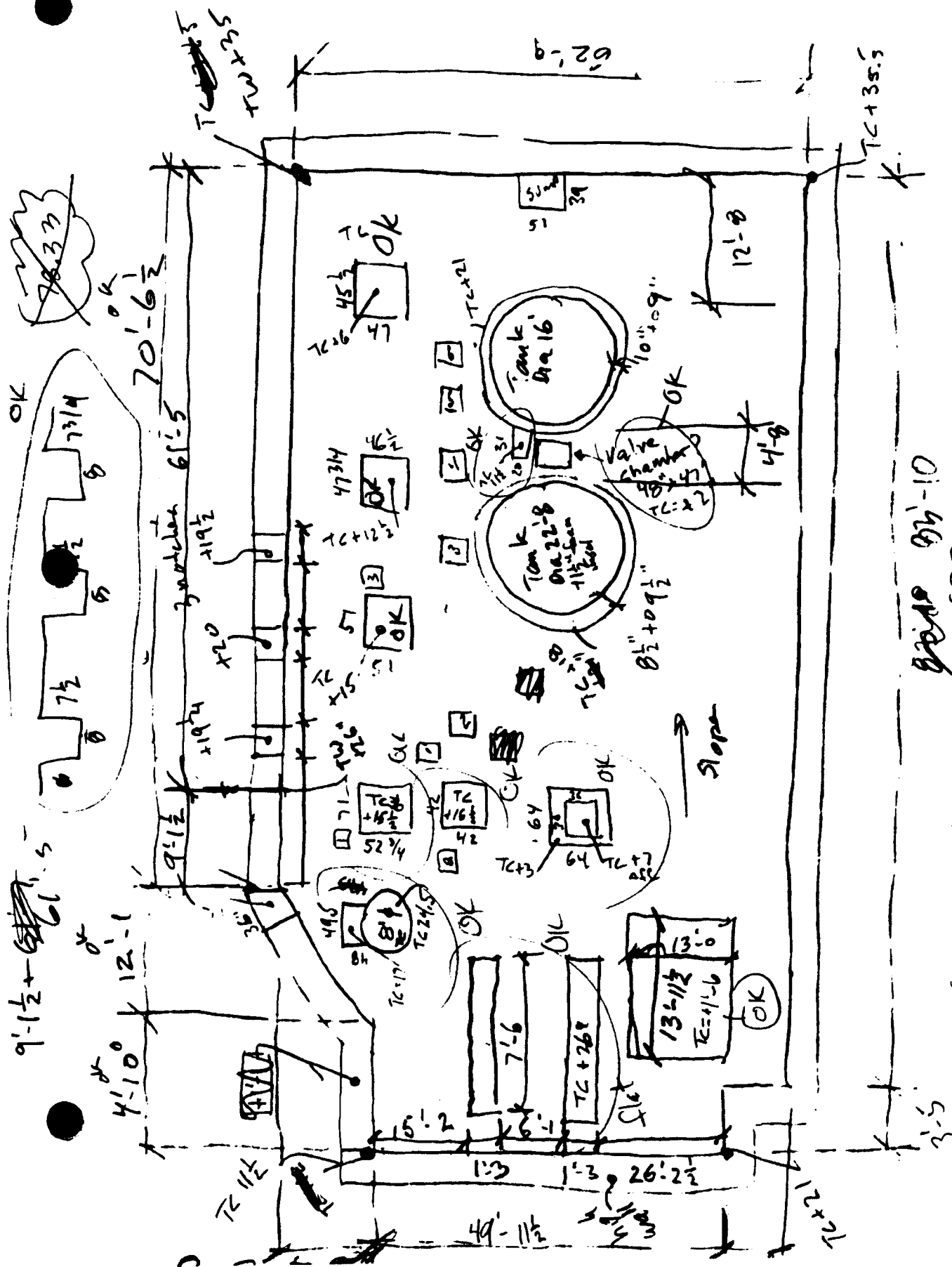
## Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.21	0.32	0.40	0.53	0.65	0.83	1yr	0.56	0.81	0.92	1.23	1.59	1.81	2.24	1yr	1.61	2.15	2.51	2.83	3.41	1yr
2yr	0.31	0.47	0.58	0.79	0.97	1.12	2yr	0.84	1.10	1.26	1.63	2.00	2.49	2.80	2yr	2.20	2.69	3.12	3.78	4.32	2yr
5yr	0.35	0.54	0.66	0.91	1.16	1.32	5yr	1.00	1.29	1.48	1.90	2.44	2.90	3.21	5yr	2.57	3.09	3.66	4.30	4.97	5yr
10yr	0.38	0.59	0.73	1.02	1.32	1.49	10yr	1.14	1.46	1.67	2.14	2.71	3.26	3.58	10yr	2.89	3.44	4.11	4.80	5.51	10yr
25yr	0.44	0.67	0.83	1.18	1.56	1.75	25yr	1.34	1.71	1.96	2.51	3.17	3.81	4.13	25yr	3.37	3.97	4.76	5.49	6.25	25yr
50yr	0.48	0.74	0.92	1.32	1.77	1.98	50yr	1.53	1.94	2.22	2.82	3.56	4.31	4.59	50yr	3.82	4.41	5.35	6.09	6.76	50yr
100yr	0.53	0.81	1.01	1.46	2.00	2.25	100yr	1.73	2.19	2.52	3.19	4.00	4.87	5.12	100yr	4.31	4.93	6.01	6.75	7.35	100yr
200yr	0.59	0.89	1.13	1.63	2.27	2.55	200yr	1.96	2.49	2.87	3.60	4.50	5.54	5.73	200yr	4.90	5.51	6.81	7.49	8.07	200yr
500yr	0.68	1.01	1.30	1.88	2.68	3.02	500yr	2.31	2.96	3.41	4.24	5.28	6.57	6.67	500yr	5.81	6.42	8.02	8.58	9.09	500yr

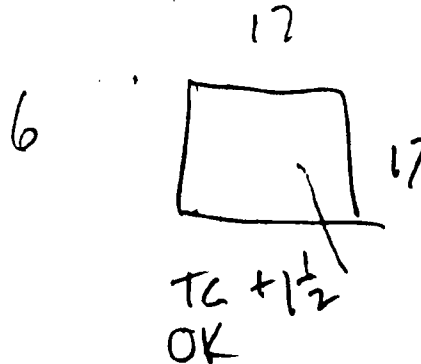
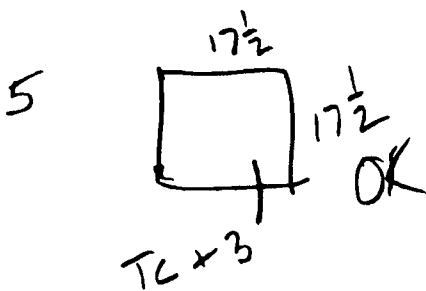
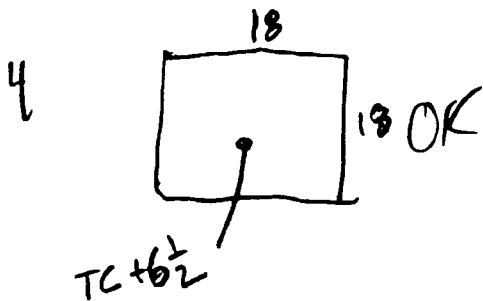
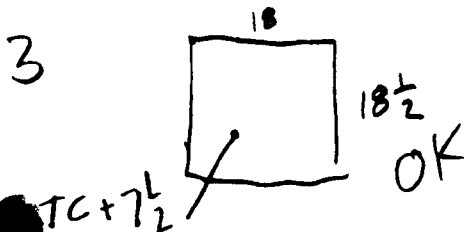
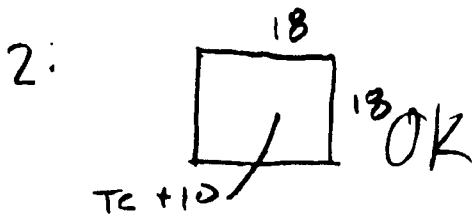
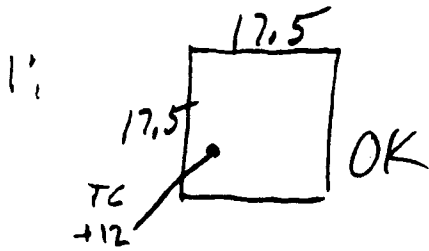
## Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.29	0.44	0.54	0.73	0.89	1.06	1yr	0.77	1.04	1.20	1.52	1.95	2.35	2.72	1yr	2.08	2.62	3.02	3.70	4.21	1yr
2yr	0.33	0.51	0.63	0.86	1.06	1.20	2yr	0.91	1.17	1.35	1.73	2.22	2.65	3.02	2yr	2.35	2.90	3.38	3.99	4.54	2yr
5yr	0.42	0.64	0.80	1.09	1.39	1.54	5yr	1.20	1.51	1.72	2.17	2.71	3.31	3.82	5yr	2.93	3.67	4.19	4.85	5.45	5yr
10yr	0.50	0.77	0.96	1.34	1.73	1.87	10yr	1.50	1.83	2.07	2.59	3.18	3.92	4.58	10yr	3.47	4.41	5.00	5.67	6.27	10yr
25yr	0.65	0.99	1.24	1.76	2.32	2.40	25yr	2.00	2.35	2.79	3.28	3.97	4.88	5.81	25yr	4.32	5.59	6.31	6.95	7.57	25yr
50yr	0.79	1.20	1.50	2.15	2.90	2.91	50yr	2.50	2.84	3.19	3.91	4.68	5.76	6.98	50yr	5.10	6.71	7.50	8.13	8.71	50yr
100yr	0.96	1.46	1.82	2.64	3.61	3.52	100yr	3.12	3.44	3.85	4.66	5.51	6.80	8.36	100yr	6.02	8.04	8.94	9.49	10.03	100yr
200yr	1.18	1.77	2.24	3.25	4.53	4.26	200yr	3.91	4.17	4.63	5.57	6.51	8.05	10.03	200yr	7.12	9.64	10.65	11.06	11.55	200yr
500yr	1.54	2.30	2.95	4.29	6.10	5.50	500yr	5.27	5.38	5.93	7.03	8.12	10.01	12.77	500yr	8.86	12.28	13.39	13.59	13.92	500yr

# FIELD NOTES



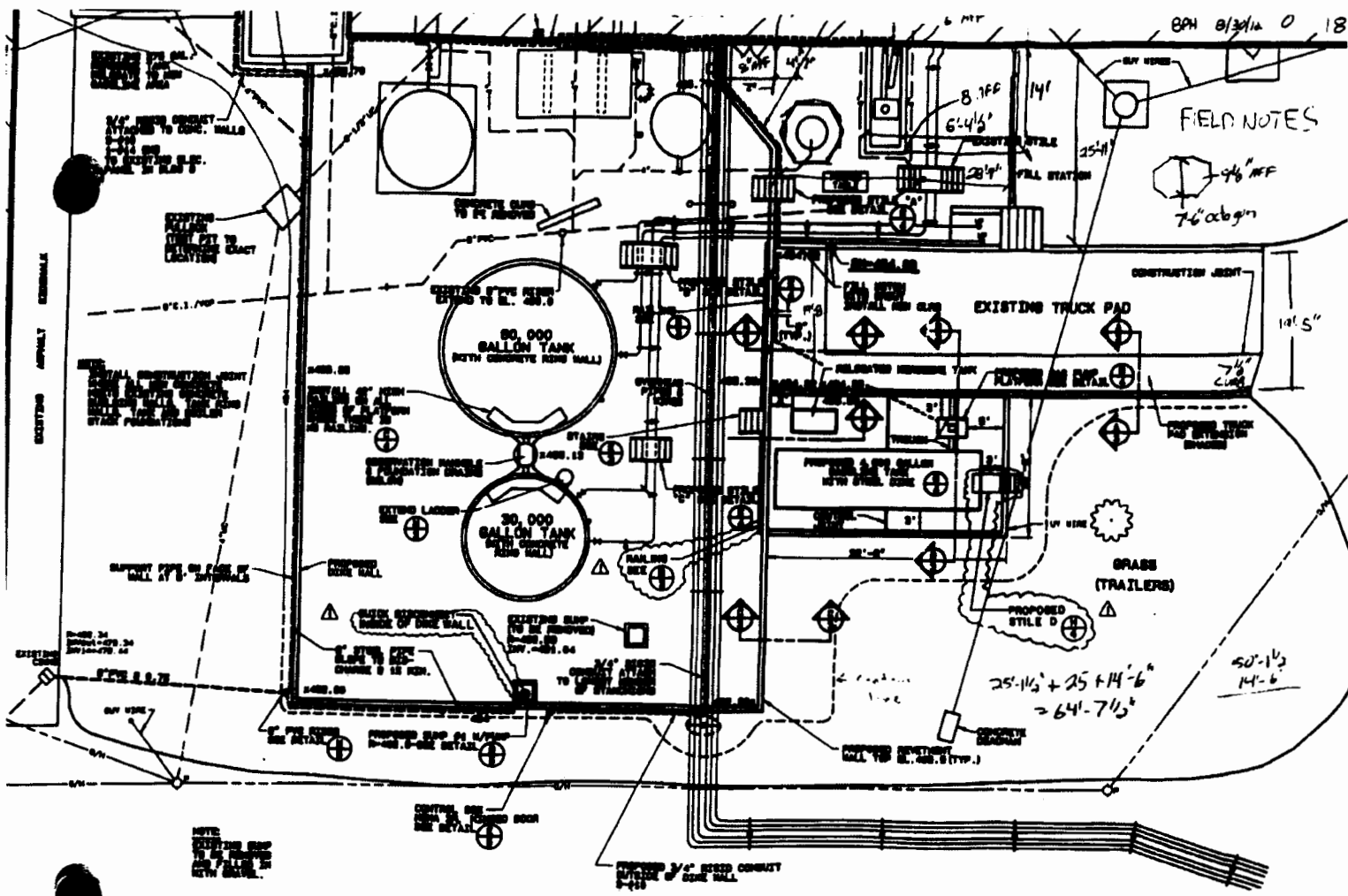
# FIELD NOTES



$$\begin{array}{r}
 61'-5 \\
 9'-1\frac{1}{2} \\
 \hline
 70'-6\frac{1}{2} \\
 12'-1 \\
 \hline
 82'-7\frac{1}{2} \\
 4'-10 \\
 \hline
 86'-17\frac{1}{2} \\
 87'-5\frac{1}{2}
 \end{array}$$

$$\begin{array}{r}
 15'-2 \\
 1'-3 \\
 6'-1 \\
 1'-3 \\
 26'-2\frac{1}{2} \\
 \hline
 49'-11\frac{1}{2}
 \end{array}$$

FIELD NOTES



Attachment 8.6  
Visual Inspection Forms

**SPCC PLAN Rev. 21, 5/14**

**OIL FILLED TRANSFORMER INSPECTIONS**

Facility Owner: FEO, MARF, or S8G

Transformer Number/Location: \_\_\_\_\_

<u>Inspection Item</u>	<u>Symbol*</u>	<u>Comments/Problems</u>	<u>Corrective Actions Taken</u>
<b><u>Tank Radiators and Valves:</u></b>			
Leaks	Y <u>N</u>	_____	_____
Bags on Valves (Note number and location if Y)	Y <u>N</u>	_____	_____
Condition of Bags on Valves	<u>S</u> U	_____	_____
Cracks	Y <u>N</u>	_____	_____
Corrosion/ Peeling paint	Y <u>N</u>	_____	_____
Each Drain Valve Locked	<u>Y</u> N	_____	_____
(Note the Total Number of Locks)			
<b><u>Revetment Area:</u></b>			
Water accumulation	Y <u>N</u>	_____	_____
Free of Debris and Vegetation	<u>Y</u> N	_____	_____
Conditions of Surrounding Fence and Lock	<u>S</u> U	_____	_____
Integrity of Macadam Dike	<u>S</u> U	_____	_____

\*Underlined symbol is expected result (Y = Yes; N = No; S = Satisfactory, U - Unsatisfactory)

Signature of Performer: \_\_\_\_\_ Badge Number \_\_\_\_\_ Date \_\_\_\_\_

Address of Performer: 350 Atomic Power Road, Ballston Spa, New York 12020

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_

KSO Environmental Engineering

**PETROLEUM BULK STORAGE TANK - MONTHLY ABOVEGROUND TANK INSPECTIONS**Facility Registration Number: 5-414506

Tank Identification Number: \_\_\_\_\_

Tank Location: \_\_\_\_\_

Tank Size (gallons): \_\_\_\_\_

Tank Contents: \_\_\_\_\_

Date of inspection: \_\_\_\_\_

INSPECTION REQUIREMENT	SAT	UNSAT	N/A
Inspect exterior surfaces of the tank for leaks and maintenance deficiencies.*			
Inspect pipes, valves and other equipment for leaks and maintenance deficiencies.*			
Identify cracks, areas of wear, corrosion and thinning, poor maintenance* and operating practices, excessive settlement of structures, separation or swelling of tank insulation, malfunctioning equipment and structural and foundation weaknesses.			
Inspect and monitor all leak detection systems, cathodic protection monitoring equipment, or other monitoring or warning systems.			
Verify all tank drain valves are locked/Note the total number of locks.			
Verify the tank is properly labeled.			
Inspect secondary containments for leaks and cracks.			
Unit-Specific Information (identify as necessary):			

\*Cosmetic deficiencies are NOT considered maintenance deficiencies for inspection purposes but should be noted in comments below and corrective actions taken.

CHECK APPROPRIATE BOX	YES	NO	No deficiencies found in previous inspection
All previously noted deficiencies/problems have been repaired.			

**COMMENTS (Noted deficiencies and corrective actions taken):**

**I certify that this inspection was performed in accordance with 6 NYCRR Part 613.6 and that all items were found to be in satisfactory condition or if deficiencies/problems were noted, they are detailed herein.**

Signature of Performer: \_\_\_\_\_ Badge No: \_\_\_\_\_ Date: \_\_\_\_\_

Address of Performer: 350 Atomic Project Road, Ballston Spa, New York 12020

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_

KSO Environmental Engineer

# MONTHLY PETROLEUM PORTABLE CONTAINER INSPECTION FORM

Location (i.e., building #): \_\_\_\_\_

Date of Inspection: \_\_\_\_\_

[illegible]

1: SAT = No significant cracks, excessive settlement, foundation weakness, or any accumulated liquids (including stormwater). Drain valves, if present, closed.

2: SAT = No noticeable container distortions, buckling, denting or bulging. No visible sign of leakage. Bung is tightly closed. Drum is properly labeled.

- |   |                              |                             |
|---|------------------------------|-----------------------------|
| 1. Containers within SPCC-approved designated storage area?             | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 2. Debris, spills or other fire hazards in containment or storage area? | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 3. Egress pathways clear and gates/doors operable?                      | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

MARK APPROPRIATE BOX	YES	NO	No deficiencies found in previous inspection
All previously noted deficiencies/problems have been repaired.			

**COMMENTS** (Noted deficiencies and corrective actions taken):

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Signature of Performer: \_\_\_\_\_ Badge No: \_\_\_\_\_ Date: \_\_\_\_\_

Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_

## KSO Environmental Engineer

Attachment 8.7  
List of Revisions

## Attachment 8.7

### List of Revisions to the Spill Prevention, Control and Countermeasure (SPCC) Plan - Revision 21

#### Knolls Atomic Power Laboratory - Kesselring Site

Date	§ Revised	Summary of Change	Revision Made By:
May-2014	All	Update Rev. 20 April 2013 to Rev. 21 April 2014	Gelting
May-2014	§1.1	Added the following sentence: <i>Except as specifically detailed herein, the facility's existing infrastructure conforms to the requirements of Part 112.</i>	Gelting
May-2014	§1.5	For sluice gates 3, 4, and 5, change "motor-operated" to "hand-operated"	Gelting
May-2014	§2.1	Add the following phrase: <i>and except as detailed herein,</i>	Gelting
May-2014	§2.2.A	For tank #005, update the tank use consistent with current use of the tank (i.e., used to fill Tank #006)	Gelting
May-2014	§2.2.A	For both tanks #005 and #006, for construction details, delete: <i>Installed in contact with an impervious surface (reinforced concrete)</i> and replace it with: <i>Construction design documents indicate that the tank is installed on a reinforced concrete ringwall, with granular drainage media provided within the interior of the ringwall.</i>	Gelting
May-2014	§2.2.A	In Sections 2.2.A.7 and 2.2.B.7, paragraph 1, within the fourth sentence, edit the phrase: <i>These calculations confirm, for tank #005/6, that the boilerhouse secondary containment structures . . . to: These calculations confirm that, for the sidewalls of tank #005/6, the boilerhouse secondary containment structure . . .</i>	Gelting
May-2014	§2.2.A	For both tanks #005 and #006, add: <i>Construction design documents indicate that the tank bottom is of single-wall construction and is installed on a reinforced concrete ringwall, with granular drainage media provided within the interior of the ringwall. Documentation is not presently available to confirm that, for the tank bottom, appropriate secondary containment and/or diversionary structures or equipment is presently available to prevent a discharge of oil in harmful quantities into or upon the navigable waters of the United States or adjoining shorelines.</i>	Gelting
May-2014	§2.2.F	Update tank information consistent with current use as a stationary tank	Gelting
May-2014	§2.2	Section 2.2.J Change T9 oil capacity from 190 to 210 gallons	Gelting
May-2014	§2.2	Add new Section 2.2.L SWTF Transformer	Gelting
May-2014	§2.3	Delete previous section 2.3.D SAR Compressor Room Oil Drum Storage Area	Gelting
May-2014	§2.3	Delete previous Section 2.3.H Line Tap Transformer Set	Gelting
May-2014	§2.3	Delete previous section 2.3.I SAR Compressor Exhaust Containment Drum	Gelting
May-2014	§2.5	Delete previous section 2.5.C 275 Gallon Portable Diesel Fuel Tank	Gelting
May-2014	§2.5	For existing section 2.5.D, revised the staging area for the tank to Building 73C (PAST 3)	Gelting
May-2014	§2.5	In existing Section 2.5.I, change Building 1C drum storage area to Building 73C drum storage area	Gelting

May-2014	\$2.6	For the 320 kW Mobile EDG (3406B), update the home base location, with attendant updates in the description of the secondary containment requirements for this location	Getling
May-2014	\$2.6	Delete previous Section 2.6.C <i>Building 83A Drum Storage Area</i>	Getling
May-2014	\$2.6	Add new Section 2.6.C <i>320kW Mobile Emergency Diesel Generator (E002197)</i> (new MAST 5)	Getling
May-2014	\$2.6	Add new Section 2.6.D <i>Vertical Proof test (Load Test) Machine</i>	Getling
May-2014	\$2.7	Add new section 2.7.A <i>Building 3C West Portable Container Storage Area</i>	Getling
May-2014	\$2.9	Delete previous Section 2.9 Babcock & Wilcox Shaw Remediation, including deletion of HPU #1 and HPU #2	Getling
May-2014	\$2.9	Add new Section 2.9 <i>Radiological Controls</i> , including new 100kW EDG (new MAST 6)	Getling
May-2014	Facility Diagram	Change T9 oil capacity from 190 to 210 gallons	Getling
May-2014	Facility Diagram	Delete previous transformer T8 (Line Tap Transformer Set)	Getling
May-2014	Facility Diagram	Add new SWTF transformer (new T8)	Getling
May-2014	Facility Diagram	Delete 275 Gallon Portable Diesel Fuel Tank	Getling
May-2014	Facility Diagram	Delete SAR Compressor Room Oil Drum Storage Area (previous DSA 4)	Getling
May-2014	Facility Diagram	Delete SAR Compressor Exhaust Containment Drum (PAC 1)	Getling
May-2014	Facility Diagram	Change previous Building 1C Drum Storage Area to Building 73C Drum Storage Area (DSA 7)	Getling
May-2014	Facility Diagram	Revise the home base location for the 320kW Mobile EDG (3406B)	Getling
May-2014	Facility Diagram	Add new 320kW Mobile EDG (E00219T) (new MAST 5)	Getling
May-2014	Facility Diagram	Add new Vertical Proof test (Load Test) Machine (new SOE 6)	Getling
May-2014	Facility Diagram	Delete Building 83A Drum Storage Area	Getling
May-2014	Facility Diagram	Delete HPU #1 and HPU #2	Getling
May-2014	Facility Diagram	Add Building 3C West Portable Container Storage Area (new DSA 4)	Getling
May-2014	Facility Diagram	Add new 100kW Mobile EDG (new MAST 6)	Getling
May-2014	Facility Diagram	Change location for PAST 3 from Building 1C to Building 73C	Getling
May-2014	\$4.1	Move (and edit) previous second paragraph, Section 4.3.1, as new paragraph 5 in Section 4.1	Getling
May-2014	\$4.1	Rename Section 4.3 to <i>Integrity Testing Requirements for Bulk Storage Tanks</i>	Getling
May-2014	\$4.3	Revise section 4.3 consistent with SP001, Standard for the Inspection of Aboveground Storage Tanks. Delete extraneous text, including Table 1.	Getling
May-2014	\$4.3.C	Delete requirement for testing tank piping per API 570	Getling
May-2014	\$5.0	Revise for the deletion of the Line Tap Transformer Set and the addition of the new SWTF transformer and new 100kW EDG and the change in staging location for the 3406B EDG.	Getling
May-2014	\$7.2	Delete Subpart 360-14 and add Subpart 374-2	Getling
May-2014	\$7.2	Add findings of non-conformance	Getling
May-2014	\$8.6	Add revised Monthly Petroleum Container Inspection Form, as previously revised in January 2014	Getling